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     (FILE 'HOME' ENTERED AT 17:33:30 ON 16 MAR 2005)

     FILE 'REGISTRY' ENTERED AT 17:35:00 ON 16 MAR 2005
L1             8 SEA ABB=ON  (ISOLEUCINE OR HISTIDINE OR THREONINE OR TRYPTOPHAN
                  )/CN
L2             3 SEA ABB=ON  (ARABINOSE OR XYLOSE)/CN
L3             1 SEA ABB=ON  ESCHERICHIA COLI/CN

     FILE 'HCAPLUS' ENTERED AT 17:36:43 ON 16 MAR 2005
L4        189580 SEA ABB=ON  (L1 OR ?ISOLEUCINE? OR ?HISTIDINE? OR ?THREONINE?
                  OR ?TRYPTOPHAN?)
L5         61069 SEA ABB=ON  L4 AND (?PREP? OR ?SYNTH?)
L6         10916 SEA ABB=ON  L5 AND (?BACT? OR ?CULTURE?)
L7           287 SEA ABB=ON  L5 AND ?BACT?(4A)?CULTURE?
L8            77 SEA ABB=ON  L7 AND (L2 OR ?GLUCOSE? OR ?PENTOSE? OR ?ARABINOSE?
                   OR ?XYLOSE?)
L9             0 SEA ABB=ON  L8 AND (?CELLULOS?(4A)?BIOMASS?)
L10            3 SEA ABB=ON  L8 AND ?BIOMASS?
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L12           77 SEA ABB=ON  L8 OR L10 OR L11
L13           76 SEA ABB=ON  L12 AND (PRD<20030226 OR PD<20030226)
L14            1 SEA ABB=ON  L13 AND ?EXPRES?
L15           15 SEA ABB=ON  L13 AND ?GENE?
L16           15 SEA ABB=ON  L14 OR L15

     FILE 'MEDLINE, BIOSIS, EMBASE, JAPIO, JICST-EPLUS' ENTERED AT 17:55:33 ON
     16 MAR 2005
L17            1 SEA ABB=ON  L16
L18           50 SEA ABB=ON  L12
L19           39 DUP REMOV L18 (11 DUPLICATES REMOVED)
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=> d que stat l16
L1             8 SEA FILE=REGISTRY ABB=ON  (ISOLEUCINE OR HISTIDINE OR THREONINE
                  OR TRYPTOPHAN)/CN
L2             3 SEA FILE=REGISTRY ABB=ON  (ARABINOSE OR XYLOSE)/CN
L3             1 SEA FILE=REGISTRY ABB=ON  ESCHERICHIA COLI/CN
L4        189580 SEA FILE=HCAPLUS ABB=ON  (L1 OR ?ISOLEUCINE? OR ?HISTIDINE? OR
                  ?THREONINE? OR ?TRYPTOPHAN?)
L5         61069 SEA FILE=HCAPLUS ABB=ON  L4 AND (?PREP? OR ?SYNTH?)
L7           287 SEA FILE=HCAPLUS ABB=ON  L5 AND ?BACT?(4A)?CULTURE?
L8            77 SEA FILE=HCAPLUS ABB=ON  L7 AND (L2 OR ?GLUCOSE? OR ?PENTOSE?
                  OR ?ARABINOSE? OR ?XYLOSE?)
L10            3 SEA FILE=HCAPLUS ABB=ON  L8 AND ?BIOMASS?
L11           10 SEA FILE=HCAPLUS ABB=ON  L8 AND (L3 OR (E OR ?ESCHERICHIA?)(W)?
                  COLI?)
L12           77 SEA FILE=HCAPLUS ABB=ON  L8 OR L10 OR L11
L13           76 SEA FILE=HCAPLUS ABB=ON  L12 AND (PRD<20030226 OR PD<20030226)

L14            1 SEA FILE=HCAPLUS ABB=ON  L13 AND ?EXPRES?
L15           15 SEA FILE=HCAPLUS ABB=ON  L13 AND ?GENE?
L16           15 SEA FILE=HCAPLUS ABB=ON  L14 OR L15

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L16  ANSWER 1 OF 15  HCAPLUS  COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER:         2004:589147  HCAPLUS
DOCUMENT NUMBER:          141:105366
TITLE:                    Methods for producing heterologous proteins in
                          E.coli and secreting into minimal
                          culture medium
INVENTOR(S):              Gimenez, Gallego Guillermo; Fernandez, Tornero Carlos;
                          Ramon, Gonzalez Alvaro; Varela, Espinosa Javier;
                          Alonso, Lebrero Jose Luis; Pivel, Ranieri Juan Pablo
PATENT ASSIGNEE(S):       Industrial Farmaceutica Cantabria, S.A., Czech Rep.
SOURCE:                   U.S. Pat. Appl. Publ., 19 pp.
                          CODEN: USXXCO
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.           KIND   DATE        APPLICATION NO.         DATE
     ---------------      ----   --------    --------------------    --------
     US 2004142414         A1    20040722    US 2003-346978          20030117 <--
PRIORITY APPLN. INFO.:                       US 2003-346978          20030117 <--
AB   The process to produce heterologous proteins in a minimal culture medium
     consists of transforming a bacterial strain that is secretary in a minimal
     culture medium with a plasmid that contains the coding sequence of said
     heterologous protein, culturing said strain in a minimal culture medium,
     and recovering the heterologous protein.  The bacterial strain that is
     secretary in a minimal culture medium can be obtained by means of a
     process that comprises transforming bacteria adapted to grow in a minimal
     culture medium with a plasmid that comprises a DNA sequence that encodes
     for a protein that is toxic for a bacteria when it accumulates in the
     cytoplasm and whose synthesis is coupled to the secretion into
     the periplasm, culturing said transformed bacteria in a minimal
     culture medium, and selecting the surviving bacteria.  It is
     applicable in the production of proteins of interest in bacteria that are
     secretary in a minimal culture medium.  The E. coli
     strains were deposited in CECT with accession nos. CECT 5700-5703.
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L16 ANSWER 2 OF 15 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:836514 HCAPLUS
DOCUMENT NUMBER: 139:322386
TITLE: Enhanced L-amino acids production by Corynebacterium glutamicum strains **overexpressing** the zwf **gene**
INVENTOR(S): Burke, Kevin; Sahm, Hermann; Eggeling, Lothar; Moritz, Bernd; Dunican, L. K.; McCormack, Ashling; Stapelton, Cliona; Mockel, Bettina; Thierbach, Georg; Dunican, Rita
PATENT ASSIGNEE(S): Ire.
SOURCE: U.S. Pat. Appl. Publ., 35 pp., Cont.-in-part of U.S. Ser. No. 531,269, abandoned.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003199045	A1	20031023	US 2002-91342	20020306 <--
US 2003175911	A1	20030918	US 2003-336049	20030103 <--
PRIORITY APPLN. INFO.:			US 2000-531269	B2 20000320 <--
			US 2002-91342	A2 20020306 <--

AB The invention relates to a process for the **preparation** of L-amino acids. The process involves fermenting an L-amino acid producing coryneform **bacteria** in a **culture** medium, concentrating L-amino acid in the culture medium or in the cells of the bacteria, and isolating the L-amino acid produced. The bacteria has an amplified zwf **gene** encoding **glucose** 6-phosphate dehydrogenase. Thus, the zwf **gene** from Corynebacterium glutamicum strain ATCC 1032 was isolated from genomic DNA by PCR. The isolated **gene** was then incorporated into the pEC-T18mob2 plasmid. The pEC-T18mob2zwf plasmid was then used to transform industrial amino acid-producing strains of Corynebacterium glutamicum.

L16 ANSWER 3 OF 15 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:118486 HCAPLUS
DOCUMENT NUMBER: 138:166248
TITLE: Novel potentially fluorogenic compounds and plating media containing same
INVENTOR(S): Schabert, Gunter
PATENT ASSIGNEE(S): Switz.
SOURCE: U.S. Pat. Appl. Publ., 19 pp., Cont.-in-part of U.S. 6,416,970.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003032080	A1	20030213	US 2002-147323	20020517 <--
US 6558917	B2	20030506		
EP 949266	A1	19991013	EP 1998-105195	19980323 <--
EP 949266	B1	20030528		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, MC, PT, IE, SI, LT, LV, FI, RO				

WO 9948899 A1 19990930 WO 1999-EP678 19990202 <--
W: AU, CA, JP, US
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
US 6416970 B1 20020709 US 2000-646528 20000919 <--
WO 2003097856 A2 20031127 WO 2003-CH308 20030514 <--
WO 2003097856 A3 20040304
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
EP 1506309 A2 20050216 EP 2003-718589 20030514 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
PRIORITY APPLN. INFO.: EP 1998-105195 A 19980323 <--
WO 1999-EP678 W 19990202 <--
US 2000-646528 A2 20000919 <--
US 2002-147323 A 20020517 <--
WO 2003-CH308 W 20030514
OTHER SOURCE(S): MARPAT 138:166248

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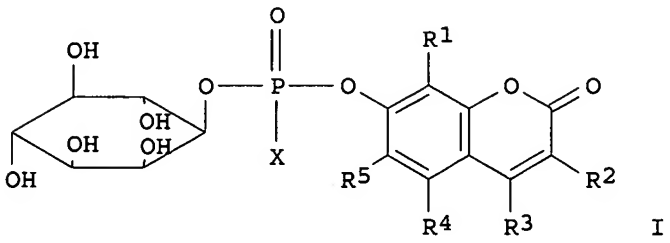

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AB The invention concerns compds. of formula (I) in which R1,R2,R3,R4 and R5 are hydrogen atoms or chromogenic substituents and X is hydroxyl, OR6 wherein R6 is selected from the group consisting of C1-C4 alkyl, or O-Me+ wherein Me+ is a cation derived from an organic or inorg. base; these compds. do not exhibit significant fluorescence but are capable of being cleaved by phosphatidyl-inositol-specific phospholipase C, an enzyme which is indicative of bacterial activity; the umbelliferyl moiety resulting from such cleavage is a strong fluorogen thus providing effective test methods for various pathogenic bacteria, such as Listeria, Staphylococcus and Clostridium species. Also disclosed are plating media for detection of microorganisms that are capable of metabolic **generation** of a phosphatidyl inositol-specific phospholipase C (PI-PLC). The plating medium can be in a dry, liquid, or semi-liquid form, depending upon its water content, and comprise at least one compound capable of forming an aqueous gel when in contact with water; at least one nutrient capable of supporting growth of said microorganism; and at least one indicator compound of formula I and/or IV, notably 4-methylumbelliferyl myo-inositol-1-phosphate or salts thereof and 5-bromo-4-chloro-3-indoxyl myo-inositol-1-phosphate or salts thereof. PI-PLC **generated** by the microorganisms of

interest leads to cleavage of the indicator compds. causing formation of fluorescence and/or color suitable for identification of type and count of such hygienically and pathol. important microorganisms as Listeria species.

L16 ANSWER 4 OF 15 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:555677 HCAPLUS
DOCUMENT NUMBER: 137:92797
TITLE: **Genetic** engineering and culture methods and microorganisms for the production of 3-(2-hydroxy-3-methyl-butyrylamino)-propionic acid and α-hydroxyisovalerate
INVENTOR(S): Hermann, Theron; Patterson, Thomas A.; Pero, Janice G.; Yocum, Roger R.; Baldenius, Kai-Uwe; Beck, Christine
PATENT ASSIGNEE(S): Omnigene Bioproducts Inc., USA; BASF AG
SOURCE: PCT Int. Appl., 80 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002057476	A2	20020725	WO 2002-US1887	20020119 <--
WO 2002057476	C2	20030410		
WO 2002057476	A3	20031030		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2434518	AA	20020725	CA 2002-2434518	20020119 <--
EP 1377662	A2	20040107	EP 2002-707543	20020119 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2005503758	T2	20050210	JP 2002-558528	20020119 <--
US 2004048343	A1	20040311	US 2003-466642	20030718 <--
PRIORITY APPLN. INFO.:			US 2001-263053P P	20010119 <--
			WO 2002-US1887 W	20020119 <--

AB The present invention features methods of producing 3-(2-hydroxy-3-methyl-butyrylamino)propionic acid (HMBPA) and α-hydroxyisovalerate (α-HIV) utilizing microorganisms having modified pantothenate **biosynthetic** enzyme activities. Recombinant microorganisms and conditions for culturing same are also featured. In developing Bacillus strains for the production of pantothenate, various **genetic** manipulations were made to enzymes involved in the pantothenate **biosynthetic** pathway and the **isoleucine**-valine (ilv) pathway. Based on the chemical structure and **biosynthetic** pathway leading to HMBPA production, a model is formulated to describe the interaction between the previously known pantothenate and ilv pathways and the newly characterized HMBPA **biosynthetic** pathway. Ketopantoate reductase (**gene** panE) and pantothenate **synthetase** (**gene** panC), as well as acetohydroxy acid isomeroreductase (

gene ilvC), contribute to the production of HMBPA and increasing their activity results in enhanced HMBPA production Reducing ketopantoate hydroxymethyltransferase (**gene** panB) activity also increases production of HMBPA. Limiting serine availability by **genetic** modification of serine hydroxymethyltransferase (**gene** glyA) or 3-phosphoglycerate dehydrogenase (**gene** serA) also increases HMBPA production Finally, overfeeding of Bacillus cultures with **glucose** and/or limitation of dissolved oxygen lead to an increase in HMBPA production

L16 ANSWER 5 OF 15 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2000:42312 HCAPLUS
DOCUMENT NUMBER: 132:191602
TITLE: Degradation of protein and amino acids by Caloramator proteoclasticus in pure **culture** and in **coculture** with **Methanobacterium** thermoformicicum Z245
AUTHOR(S): Tarlera, S.; Stams, A. J. M.
CORPORATE SOURCE: Catedra de Microbiologia, Facultad de Quimica y Facultad de Ciencias, Montevideo, CC 1157, Urug.
SOURCE: Applied Microbiology and Biotechnology (**1999**), 53(1), 133-138
CODEN: AMBIDG; ISSN: 0175-7598
PUBLISHER: Springer-Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English
AB This study investigated the degradation of proteins and amino acids by C. proteoclasticus, an anaerobic thermophilic (55°) fermentative bacterium isolated from an anaerobic bioreactor. Expts. were performed in the presence and absence of M. thermoformicicum Z245, a methanogen that can use both H2 and formate for growth. Higher production rates and yields of the principal fermentation products from gelatin were observed in methanogenic coculture. The specific proteolytic activity in coculture tripled the value obtained in pure culture. C. proteoclasticus fermented glutamate to acetate, formate, H2, and alanine. In methanogenic coculture, a shift towards higher amts. of acetate and H2 with no alanine production was observed Exts. of glutamate-grown cells possessed high activities of β-methylaspartase, a key enzyme of the mesaconate pathway leading to acetate. The presence of 2 enzymes (alanine-α-ketoglutarate aminotransferase and NADH-dependent alanine dehydrogenase) usually involved in the **biosynthesis** of alanine from pyruvate was also detected. The fermentation of amino acids known to be oxidatively deaminated (leucine and valine) was improved in the presence of both **methanogenesis** and glycine, a known electron acceptor in the Stickland reaction. Culture conditions seem to be very important in the way C. proteoclasticus disposes of reducing equivs. formed during the degradation of amino acids.
REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 6 OF 15 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:688219 HCAPLUS
DOCUMENT NUMBER: 132:276220
TITLE: Comparison of differential plating media and two chromatography techniques for the detection of histamine production in bacteria
AUTHOR(S): Actis, L. A.; Smoot, J. C.; Barancin, C. E.; Findlay, R. H.
CORPORATE SOURCE: Department of Microbiology, Miami University, Oxford, OH, USA

SOURCE: Journal of Microbiological Methods (**1999**), 39(1), 79-90
CODEN: JMIMDQ; ISSN: 0167-7012
PUBLISHER: Elsevier Science Ireland Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The bacterial enzyme **histidine** decarboxylase (Hdc) catalyzes the conversion of **histidine** into histamine. This amine is essential for the **biosynthesis** of iron chelators (siderophores) and is an important cause of food poisoning after consumption of fish contaminated with histamine-producing bacteria. In this work we compared different methods for detecting histamine secreted by different bacterial strains. The presence of histamine in the culture supernatant of Vibrio anguillarum, which produces Hdc and secretes the histamine-containing siderophore anguibactin, was detected by thin-layer chromatog. Similar results were obtained using the **culture** supernatant of the **Acinetobacter** baumannii 19606 prototype strain that secretes the histamine-containing siderophore acinetobactin. Conversely, histamine was not detected in the culture supernatant of an isogenic V. anguillarum Hdc mutant and the A. baumannii 8399 strain that secretes a catechol siderophore different from anguibactin and acinetobactin. These results were confirmed by capillary gas chromatog./mass spectrometry. However, all these strains tested pos. for histamine secretion when cultured on differential plating media containing **histidine** and a pH indicator, which were specifically designed for the detection of histamine-producing bacteria. The pH increase of the medium surrounding the bacterial colonies was however drastically reduced when the **histidine** -containing medium was supplemented with peptone, beef extract, and **glucose.** The **histidine**-containing culture supernatants of the A. baumannii and V. anguillarum strains showed an increase of about two units of pH, turned purple upon the addition of cresol red, and contained high amts. of ammonia. **Escherichia coli** strains, which are Hdc neg. and do not use **histidine** as a carbon, nitrogen, and energy source, gave neg. results with the differential solid medium and produced only moderate amts. of ammonia when cultured in the presence of excess **histidine.** This study demonstrates that, although more laborious and requiring some expensive equipment, thin-layer and gas chromatog./mass spectrometry are more accurate than differential media for detecting bacterial histamine secretion. The results obtained with these anal. methods are not affected by byproducts such as ammonia, which are **generated** during the degradation of **histidine** and produce false pos. results with the differential plating media.

REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 7 OF 15 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1989:550304 HCAPLUS
DOCUMENT NUMBER: 111:150304
TITLE: Growth and metabolic properties of **Bacteroides** intermedius in anaerobic continuous **culture**
AUTHOR(S): Hamilton, Ian R.; McKee, A. S.; Bowden, G. H.
CORPORATE SOURCE: Dep. Oral Biol., Univ. Manitoba, Winnipeg, MB, R3E 0W3, Can.
SOURCE: Oral Microbiology and Immunology (**1989**), 4(2), 89-97
CODEN: OMIMEE; ISSN: 0902-0055
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Two strains of B. intermedius, BH20/30 and BH18/23, were grown in anaerobic continuous culture under various conditions for ≤54 days.

Strain BH20/30 grew over a relatively wide pH range, 5-8, with a maximum at pH 7.0 at a dilution rate of 0.1/h with a **glucose** limitation, while strain BH18/23 had a pH optimum of 5.8-7.3 and would not grow above and below this range. The maximum growth rate for the latter strain was 0.23/h, or a doubling time of 3 h at the upper limit of pH 7.3. The yield values for strain BH18/23 reached 177-87 g cell dry weight/mol **glucose** in the optimum pH range (6.0-7.0) and amino acid anal. of the spent medium indicated that these high values were the result of the combined use of **glucose** and amino acids; the cultures also exhibited proteolytic activity. The major acid end-products in the same pH range were formate and succinate, with lesser concns. of acetate, isovalerate, and fumarate; small amts. of lactate appeared as the cells were stressed at pH >7.5 when the culture was washing out of the chemostat. **Glucose** metabolism appeared to function through the glycolytic pathway in B. intermedius BH18/23, since the glycolytic inhibitors NaF and Na iodoacetate completely inhibited **glucose** utilization, as did the proton ionophore gramicidin and the ATPase inhibitor N,N'-dicyclohexylcarbodiimide. Inhibition by these latter compds. indicated that the saccharolytic Bacteroides utilize H+ gradients **generated** by H+-ATPase) to conserve energy. B. intermedius BH18/23 had activity in membrane **prepns.** of enzyme II (**glucose**) of the phosphoenolpyruvate phosphotransferase system, indicating that sugar transport by the organism occurs, at least in part, by this group translocation process.

L16 ANSWER 8 OF 15 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1977:550179 HCAPLUS
DOCUMENT NUMBER: 87:150179
TITLE: Fermentative production of L-**isoleucine**
INVENTOR(S): Kakimoto, Takehiko; Nishikawa, Hideo
PATENT ASSIGNEE(S): Nippon Synthetic Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE	
JP 52064487	A2	19770527	JP 1975-138430		19751117	<--
PRIORITY APPLN. INFO.:			JP 1975-138430	A	19751117	<--

AB L-**Isoleucine** [73-32-5] was produced by Pseudomonas, Agrobacterium, **Alcaligenes**, Escherichia, Aerobacter, Serratia, Proteus, Erwinia, Micrococcus, Staphylococcus, Sarcina, Bacillus, Corynebacterium, Arthrobacter, Brevibacterium, Achromobacter, or Bacterium by culturing on a medium containing 1,2-butylene oxide [106-88-7] or 1,2-butanediol [58-40-2]. Thus, **Brevibacterium ammoniagenes** IFO 12071 was **cultured** with shaking at 30° for 3 days on a medium (pH 5.0-7.0) containing **glucose** 5.0, CaCO3 2.0, meat extract 0.2, NH4NO3 1.0, K2HPO4 0.1, MgSO4·7H20 0.05, and 1,2-butylene oxide 1.0%. Production of L-**isoleucine** was 3.50 g/L.

L16 ANSWER 9 OF 15 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1977:169358 HCAPLUS
DOCUMENT NUMBER: 86:169358
TITLE: L-**Tryptophan**
INVENTOR(S): Yokozeki, Kenzo; Sano, Konosuke; Yamada, Kazuhiko; Kagawa, Teruhiko; Eguchi, Chikahiko; Noda, Ichiro;

Mitsugi, Koji
PATENT ASSIGNEE(S): Ajinomoto Co., Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 52015892	A2	19770205	JP 1975-91710	19750728 <--
PRIORITY APPLN. INFO.:			JP 1975-91710 A	19750728 <--

OTHER SOURCE(S): CASREACT 86:169358
AB L-**Tryptophan** [73-22-3] was produced by enzymic hydrolysis of 5-indolylmethylhydantoin in a solution containing hydroxylamine (I), phenylhydrazine, HOCN, semicarbazide, fericyanic acid, D-cycloserine, azide, or PhOH. Thus, **Flavobacterium aminogenes** AJ-3912 was **cultured** with shaking at 30° for 16 h on 50 mL medium (pH 7.0) containing **glucose** 0.5, yeast extract 1.0, peptone 1.0, NaCl 0.5, and DL-**tryptophanhydantoin** (II) 0.2 g/dL. The culture cells were suspended in 50 mL of 0.1M phosphate buffer (pH 8.0) containing 50 mM I-HCl. II was added to 5 mL of the suspension at 25 mg and reacted at 37° for 16 h to yield 4.14 mg L-**tryptophan**/mL.

L16 ANSWER 10 OF 15 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1976:176465 HCAPLUS
DOCUMENT NUMBER: 84:176465
TITLE: Analysis of RNA turnover in bacteria using **histidine** as a radioactivity trap for [2-3H]adenine nucleotides
AUTHOR(S): Burton, Kenneth
CORPORATE SOURCE: Dep. Biochem., Univ. Newcastle upon Tyne, Newcastle upon Tyne, UK
SOURCE: Journal of Molecular Biology (**1976**), 102(2), 333-48
CODEN: JMOBAK; ISSN: 0022-2836
DOCUMENT TYPE: Journal
LANGUAGE: English
AB 3H is incorporated from adenine-2-3H into **histidine** and then into protein by **bacterial cultures synthesizing histidine.** The kinetics of incorporation of 3H into protein, RNA, and DNA are used to evaluate RNA turnover in growing **E. coli.** In strain B at 37°, the fraction of pulse-labeled RNA which is unstable changes from 0.83 to 0.50 as the growth rate is increased from 0.08 to 2.6 **generations**/hr. The unstable fraction is 0.65 at 1.27 **generations**/hr in **glucose**-salts medium. Results for other strains of **E. coli**, for Salmonella typhimurium and Bacillus subtilis indicate a similar extent of RNA turnover.

L16 ANSWER 11 OF 15 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1973:503605 HCAPLUS
DOCUMENT NUMBER: 79:103605
TITLE: Screening of microorganisms for production of L-**isoleucine** from DL-α-hydroxybutyric acid or DL-α-bromobutyric acid
AUTHOR(S): Matsushima, Hirochika; Mase, Yasuo
CORPORATE SOURCE: Ferment. Res. Lab., Sankyo Co. Ltd., Tanashi, Japan
SOURCE: Hakko Kogaku Zasshi (**1973**), 51(7), 443-51

CODEN: HKZAA2; ISSN: 0367-5963
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
AB Aerobacter, Brevibacterium, Corynebacterium, Escherichia, Flavobacterium, Micrococcus, Sarcina, and many other bacteria produced L-**isoleucine** from DL-2-hydroxybutyric acid (I). **Brevibacterium ammoniagenes** IAM 1641 was **cultured** in shaking flasks containing 2% I, 10% cane molasses (as **glucose**), 0.9% urea, 1% corn steep liquor, and 0.5% proflo at 30° for 3 to 4 days, and 7-8 g L-**isoleucine** was produced in 1 l. medium. The same production rate was also obtained in 5 l. jar fermenters. DL-2-Bromobutyric acid (II) was almost as good a precursor as I. Several strains of L-glutamic acid producers using II as a precursor were cultured and all of them accumulated L-**isoleucine** at a high concentration For instance, Brevibacterium roseum ATCC 13825 produced 12.3 g L-**isoleucine** in 1 l. medium containing 3.2% II.

L16 ANSWER 12 OF 15 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1970:508239 HCAPLUS
DOCUMENT NUMBER: 73:108239
TITLE: Microbial production of L-**threonine**
INVENTOR(S): Nakayama, Kiyoshi; Kase, Hiroshi
PATENT ASSIGNEE(S): Kyowa Fermentation Industry Co. Ltd.
SOURCE: Ger. Offen., 22 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 1817666	A	19700827	DE 1968-1817666	19681224 <--
PRIORITY APPLN. INFO.:			DE 1968-1817666 A	19681224 <--

AB Various microorganisms, e.g. Aerobacter [Enterobacter] **aerogenes**, Serratia marcescens, or **Arthrobacter** paraffineus, **cultured** for producing L-**threonine** required 2 or 3 of the amino acids **isoleucine**, methionine, lysine, or diaminopimelic acid. The microorganisms were cultured aerobically in an aqueous medium containing the optimal (or less) amts. of the required amino acids.
Thus, E. **aerogenes** NM-IS-5 (ATCC 21,215) was cultured 96 hr at 30° in medium containing **glucose** 5, (NH4)2SO4 1.4, KH2PO4 0.05, K2HPO4 0.05, MgSO4.7H2O 0.025, FeSO4.7H2O 0.001, MnSO4.4H2O 0.001, and CaCO3 2% and **isoleucine** 50, methionine 100, and diaminopimelic acid 200 mg/l. to give 7.8 g L-**threonine**/l.

L16 ANSWER 13 OF 15 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1965:24077 HCAPLUS
DOCUMENT NUMBER: 62:24077
ORIGINAL REFERENCE NO.: 62:4355f-g
TITLE: The influence of some amino acids, trace elements, and B group vitamins on the growth and vitamin B12 **biosynthesis** of **Propionibacterium** shermanii **cultures**
AUTHOR(S): Kaleja, E.
SOURCE: Mikrobiol. Protsessy i Proizv., Akad. Nauk Latv. SSR, Inst. Mikrobiol. (**1964**) 15-21
DOCUMENT TYPE: Journal

LANGUAGE: Russian
AB P. shermanii was cultivated at 28° in a culture liquid containing **glucose** 2%, peptone 1, CH3COONa 0.6, (NH4)2SO4 0.3, KH2PO4 0.5, K2HPO4 0.5, MgSO4 0.2, traces of NaCl and MnSO4, biotin 10-7%, pantothenate, p-aminobenzoic acid, and thiamine 10-5% each, and CoCl2.6H2O, and 5,6-dimethylbenzimidazole 10-4%. The addition of methionine, **threonine**, and glycine increased growth, and DL-serine promoted the **biosynthesis** of vitamin B12 (I). While CoCl2 stimulated I **synthesis** even at 1000 γ/ml., CuSO4 was inhibitory at 100 γ/ml. The presence of vitamin B1 (1 γ/ml.), and biotin (50 γ/ml.) increased the **biosynthesis** of I. In **general**, no parallelism was observed between growth and I **biosynthesis** of the culture.

L16 ANSWER 14 OF 15 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1957:13544 HCAPLUS
DOCUMENT NUMBER: 51:13544
ORIGINAL REFERENCE NO.: 51:2932i,2933a-c
TITLE: Inhibitory effect of **glucose** on enzyme formation
AUTHOR(S): Neidhardt, Frederick C.; Magasanik, Boris
CORPORATE SOURCE: Harvard Med. School, Boston, MA
SOURCE: Nature (**1956**), 178, 801-2
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB The reversal of the **glucose** (I) inhibition of induced enzyme **biosynthesis** was demonstrated on a wild strain of Aerobacter **aerogenes** in which L-**histidine** was substituted for (NH4)2SO4, the customary N source of the I-containing minimal medium; and in a mutant strain of this organism requiring L-glutamic acid for growth in which case L-**histidine** was substituted for L-glutamic acid in a I-(NH4)2SO4 medium. In both cases the production of histidase in the presence of I was a prerequisite to growth. Growth occurred with the production of the histidase series of enzymes. This demonstrates that I permits histidase in A. **aerogenes** when the action of this enzyme system furnishes products necessary for growth not obtainable from the degradation of I. Conversely I inhibits histidase **biosynthesis** when the products of the reactions catalyzed by this enzyme system merely augment the supply of metabolites resulting from I degradation. The degradation of I by A. **aerogenes** under aerobic conditions is at a rate double that commensurate with growth rate and total crop of cells. This results in large amounts of labile (high energy) phosphate. In the presence of inorganic N, plentiful supplies of nitrogenous organic compds. result. This explains why supplementation of I media with vitamins, amino acids, purine and pyrimidine fails to increase growth rate.

L16 ANSWER 15 OF 15 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1955:46704 HCAPLUS
DOCUMENT NUMBER: 49:46704
ORIGINAL REFERENCE NO.: 49:9094e-h
TITLE: The metabolic control of **histidine** assimilation and dissimilation in Aerobacter **aerogenes**
AUTHOR(S): Magasanik, Boris
CORPORATE SOURCE: Harvard Med. School, Boston, MA
SOURCE: Journal of Biological Chemistry (**1955**), 213, 557-69
CODEN: JBCHA3; ISSN: 0021-9258
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB cf. C.A. 48, 3467f. The amount of L-**histidine** required to support the growth of a **histidineless** mutant of A. **aerogenes** depends upon the nature of the major C source of the medium. A few compds., of which **glucose** is the most prominent, permit full growth with a supplement of 20 γ/cc. of L-**histidine.** The majority of the compds. which can serve as the sole sources of C for A. **aerogenes** requires a supplement of about 500 γ/cc. of L-**histidine.** The cause of this phenomenon was investigated with **glucose** and myo-inositol as C sources representative of the 2 classes of compds. During growth on inositol the added **histidine** was rapidly lost through degradation by adaptive enzymes whose **synthesis** it had induced. **Glucose** is a powerful inhibitor of the **synthesis** of these enzymes. Acyl derivs. of L-**histidine** could supply **histidine** for protein **synthesis**, but did not induce the production of **histidine** -degrading enzymes; consequently the growth-promoting activity of **acylhistidines** on inositol exceeded by far that of free **histidine.** The ratio of **histidine** assimilation and dissimilation depends on the concentration of **histidine**-degrading enzymes in the cell, which in turn is controlled by the composition of the growth medium.

```
=> d que stat l19
L1             8 SEA FILE=REGISTRY ABB=ON  (ISOLEUCINE OR HISTIDINE OR THREONINE
                  OR TRYPTOPHAN)/CN
L2             3 SEA FILE=REGISTRY ABB=ON  (ARABINOSE OR XYLOSE)/CN
L3             1 SEA FILE=REGISTRY ABB=ON  ESCHERICHIA COLI/CN
L4        189580 SEA FILE=HCAPLUS ABB=ON  (L1 OR ?ISOLEUCINE? OR ?HISTIDINE? OR
                  ?THREONINE? OR ?TRYPTOPHAN?)
L5         61069 SEA FILE=HCAPLUS ABB=ON  L4 AND (?PREP? OR ?SYNTH?)
L7           287 SEA FILE=HCAPLUS ABB=ON  L5 AND ?BACT?(4A)?CULTURE?
L8            77 SEA FILE=HCAPLUS ABB=ON  L7 AND (L2 OR ?GLUCOSE? OR ?PENTOSE?
                  OR ?ARABINOSE? OR ?XYLOSE?)
L10            3 SEA FILE=HCAPLUS ABB=ON  L8 AND ?BIOMASS?
L11           10 SEA FILE=HCAPLUS ABB=ON  L8 AND (L3 OR (E OR ?ESCHERICHIA?)(W)?
                  COLI?)
L12           77 SEA FILE=HCAPLUS ABB=ON  L8 OR L10 OR L11
L18           50 SEA L12
L19           39 DUP REMOV L18 (11 DUPLICATES REMOVED)

=> d ibib abs l19 1-39

L19  ANSWER 1 OF 39  EMBASE  COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED.
     on STN
ACCESSION NUMBER:   2004199001  EMBASE
TITLE:              Catabolism of leucine to branched-chain fatty acids in
                    Staphylococcus xylosus.
AUTHOR:             Beck H.C.; Hansen A.M.; Lauritsen F.R.
CORPORATE SOURCE:   H.C. Beck, Biotechnological Institute, Holbergsvej 10,
                    DK-6000 Kolding, Denmark. hcb@bioteknologisk.dk
SOURCE:             Journal of Applied Microbiology, (2004) 96/5 (1185-1193).
                    Refs: 29
                    ISSN: 1364-5072  CODEN: JAMIFK
COUNTRY:            United Kingdom
DOCUMENT TYPE:      Journal; Article
FILE SEGMENT:       004     Microbiology
LANGUAGE:           English
SUMMARY LANGUAGE:   English
AB   Aims: Staphylococcus xylosus is an important starter culture in the
     production of flavours from the branched-chain amino acids leucine, valine
     and isoleucine in fermented meat products. The sensorially most
     important flavour compounds are the branched-chain aldehydes and acids
     derived from the corresponding amino acids and this paper intends to
     perspectivate these flavour compounds in the context of leucine
     metabolism. Methods and Results: GC and GC/MS analysis combined with
     stable isotope labelling was used to study leucine catabolism. This amino
     acid together with valine and isoleucine was used as precursors
     for the production of branched-chain fatty acids for cell membrane
     biosynthesis during growth. A 83.3% of the cellular fatty acids
     were branched. The dominating fatty acid was anteiso-C(15:0) that
     constituted 55% of the fatty acids. A pyridoxal 5'-phosphate and
     α-ketoacid dependent reaction catalysed the deamination of leucine,
     valine and isoleucine into their corresponding
     α-ketoacids. As α-amino group acceptor α-keto-β-
     methylvaleric acid and α-ketoisovaleric acid was much more efficient
     than α-ketoglutarate. The sensorially and metabolic key intermediate
     on the pathway to the branched-chain fatty acids, 3-methylbutanoic acid
     was produced from leucine at the onset of the stationary growth phase and
     then, when the growth medium became scarce in leucine, from the oxidation
     of glucose via pyruvate. Conclusions: This paper demonstrates
     that the sensorially important branched-chain aldehydes and acids are
     important intermediates on the metabolic route leading to branched-chain
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fatty acids for cell membrane **biosynthesis**. Significance and Impact of the Study: The metabolic information obtained is extremely important in connection with a future biotechnological design of starter cultures for production of fermented meat.

L19 ANSWER 2 OF 39 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 2004071646 EMBASE
TITLE: Profiling and comprehensive expression analysis of ABC transporter solute-binding proteins of Bacillus subtilis membrane based on a proteomic approach.
AUTHOR: Bunai K.; Ariga M.; Inoue T.; Nozaki M.; Ogane S.; Kakeshita H.; Nemoto T.; Nakanishi H.; Yamane K.
CORPORATE SOURCE: Dr. K. Yamane, Institute of Biological Sciences, University of Tsukuba, Tsukuba-Shi, Ibaraki 305-8572, Japan. kyamane@sakura.cc.tsukuba.ac.jp
SOURCE: Electrophoresis, (2004) 25/1 (141-155).
Refs: 27
ISSN: 0173-0835 CODEN: ELCTDN
COUNTRY: Germany
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 004 Microbiology
LANGUAGE: English
SUMMARY LANGUAGE: English
AB We analyzed ABC transporter solute-binding proteins (SBPs) of the Bacillus subtilis membrane using a proteomic approach. We **prepared** a washed cell membrane fraction that was insoluble in 134 mM nondetergent sulfobetaine and then extracted proteins using mixtures of detergents in a stepwise manner. The membrane proteins were resolved by three two-dimensional polyacrylamide gel electrophoresis (2-D PAGE) or two one-dimensional (1-D) PAGE procedures, electroblotted, and digested in the presence of 5% or 80% acetonitrile. Thereafter, matrix-assisted laser desorption/ionization-time of flight-mass spectrometry (MALDI-TOF MS) identified 637 proteins corresponding to 15.9% of the total cellular proteins. We predicted that among these, 256 were membrane proteins, 101 were lipoproteins or secretory proteins and 280 were soluble proteins containing peripheral proteins that function in both the cytoplasm and the cell membrane such as SecA and FtsY. Among the 637 proteins, we identified 30 SBPs among 38 importers predicted by a bioinformatic search of the genome. We confirmed expression of the genes for the 30 SBPs using DNA microarray analysis. We compared the 2-D gel separation profiles of submembrane fractions solubilized by 1% n-dodecyl-β-D-maltoside from cells cultured on Luria Bertani (LB), S7, and S7 medium without glutamate as well as DNA microarray data on LB and S7. The results suggested that YcdH, YtmK and YurO are binding proteins for Mn(++), glutamate and **glucose**, respectively, and that YqiX and YxeM are binding proteins for amino acids (**tryptophan** in S7 medium).

L19 ANSWER 3 OF 39 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 2005056369 EMBASE
TITLE: Enhanced amylase production by Bacillus subtilis using a dual exponential feeding strategy.
AUTHOR: Huang H.; Ridgway D.; Gu T.; Moo-Young M.
CORPORATE SOURCE: T. Gu, Department of Chemical Engineering, Ohio University, Athens, OH 45701, United States. gu@ohio.edu
SOURCE: Bioprocess and Biosystems Engineering, (2004) 27/1 (63-69).
Refs: 26
ISSN: 1615-7591 CODEN: BBEIBV
COUNTRY: Germany

DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 004 Microbiology
LANGUAGE: English
SUMMARY LANGUAGE: English

AB A recombinant Bacillus subtilis strain (ATCC 31784) haboring the plasmid pC194 with a thermostable α-amylase gene was cultured in a 22-1 B. Braun Biostat C fermenter. Traditional batch operations suffer from low cell mass and protein productions because a high initial **glucose** concentration causes substrate inhibition and also product inhibition due to acetate accumulation. An exponential fed-batch strategy to prevent these inhibitions was developed in this work. The host strain is auxotrophic for phenylalanine, tyrosine and **tryptophan.** Due to low solubilities of tyrosine and **tryptophan** in the feed stream, tyrosine and **tryptophan** were dissolved separately in ammonia water to form a second feed stream. By dual feeding both streams at different exponential feed rates, a high cell density of 17.6 g/1 and a final α-amylase activity of 41.4 U/ml and the overall **biomass** yield of 0.39 g cell/g **glucose** were achieved. .COPYRGT. Springer-Verlag 2004.

L19 ANSWER 4 OF 39 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 2003574713 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14654042
TITLE: Determination of amino acids in cell culture and fermentation broth media using anion-exchange chromatography with integrated pulsed amperometric detection.
AUTHOR: Hanko Valoran P; Rohrer Jeffrey S
CORPORATE SOURCE: Dionex Corp, 500 Mercury Drive, Sunnyvale, CA 94088-3603, USA.. val.hanko@dionex.com
SOURCE: Analytical biochemistry, (2004 Jan 1) 324 (1) 29-38. Journal code: 0370535. ISSN: 0003-2697.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200410
ENTRY DATE: Entered STN: 20031216
Last Updated on STN: 20041013
Entered Medline: 20041012

AB Cell culture and fermentation broth media are used in the manufacture of biotherapeutics and many other biological materials. Characterizing the amino acid composition in cell culture and fermentation broth media is important because deficiencies in these nutrients can reduce desired yields or alter final product quality. Anion-exchange (AE) chromatography using sodium hydroxide (NaOH) and sodium acetate gradients, coupled with integrated pulsed amperometric detection (IPAD), determines amino acids without sample derivatization. AE-IPAD also detects carbohydrates, glycols, and sugar alcohols. The presence of these compounds, often at high concentrations in cell culture and fermentation broth media, can complicate amino acid determinations. To determine whether these samples can be analyzed without sample **preparation**, we studied the effects of altering and extending the initial NaOH eluent concentration on the retention of 42 different carbohydrates and related compounds, 30 amino acids and related compounds, and 3 additional compounds. We found that carbohydrate retention is impacted in a manner different from that of amino acid retention by a change in [NaOH]. We used this selectivity difference to design amino acid determinations of diluted cell culture and fermentation broth media, including Bacto yeast extract-peptone-dextrose (yeast **culture** medium) broth, Luria-Bertani (**bacterial**

culture medium) broth, and minimal essential medium and serum-free protein-free hybridoma medium (mammalian cell culture media). These media were selected as representatives for both prokaryotic and eukaryotic culture systems capable of challenging the analytical technique presented in this paper. **Glucose** up to 10mM (0.2%, w/w) did not interfere with the chromatography, or decrease recovery greater than 20%, for the common amino acids arginine, lysine, alanine, **threonine**, glycine, valine, serine, proline, **isoleucine**, leucine, methionine, **histidine**, phenylalanine, glutamate, aspartate, cystine, and tyrosine.

L19 ANSWER 5 OF 39 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 2003193147 EMBASE
TITLE: Enterolysin A, a cell wall-degrading bacteriocin from Enterococcus faecalis LMG 2333.
AUTHOR: Nilsen T.; Nes I.F.; Holo H.
CORPORATE SOURCE: T. Nilsen, Massachusetts General Hospital, Infectious Disease Division, Bacterial Pathogenesis, 65 Landsdowne St., Cambridge, MA 01239, Norway. tnilsen@partners.org
SOURCE: Applied and Environmental Microbiology, (1 May 2003) 69/5 (2975-2984).
Refs: 52
ISSN: 0099-2240 CODEN: AEMIDF
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 004 Microbiology
LANGUAGE: English
SUMMARY LANGUAGE: English

AB A novel antimicrobial protein, designated enterolysin A, was purified from an Enterococcus faecalis LMG 2333 culture. Enterolysin A inhibits growth of selected enterococci, pediococci, lactococci, and lactobacilli. Antimicrobial activity was initially detected only on solid media, but by growing the bacteria in a fermentor under optimized production conditions (MRS broth with 4% [wt/vol] **glucose**, pH 6.5, and a temperature between 25 and 35°C), the bacteriocin activity was increased to 5,120 bacteriocin units ml(-1). Enterolysin A production was regulated by pH, and activity was first detected in the transition between the logarithmic and stationary growth phases. Killing of sensitive bacteria by enterolysin A showed a dose-response behavior, and the bacteriocin has a bacteriolytic mode of action. Enterolysin A was purified, and the primary structure was determined by combined amino acid and DNA sequencing. This bacteriocin is translated as a 343-amino-acid **preprotein** with an sec-dependent signal peptide of 27 amino acids, which is followed by a sequence corresponding to the N-terminal part of the purified protein. Mature enterolysin A consists of 316 amino acids and has a calculated molecular weight of 34,501, and the theoretical pI is 9.24. The N terminus of enterolysin A is homologous to the catalytic domains of different cell wall-degrading proteins with modular structures. These include lysostaphin, ALE-1, zoocin A, and LytM, which are all endopeptidases belonging to the M37 protease family. The N-terminal part of enterolysin A is linked by a **threonine**-proline-rich region to a putative C-terminal recognition domain, which shows significant sequence identity to two bacteriophage lysins.

L19 ANSWER 6 OF 39 MEDLINE on STN DUPLICATE 2

ACCESSION NUMBER: 2003347260 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12823803
TITLE: Changes in growth and **polyglucose synthesis** in response to fructose metabolism by

Fusobacterium nucleatum grown in continuous **culture.**
AUTHOR: Zilm P S; Gully N J; Rogers A H
CORPORATE SOURCE: Microbiology Laboratory, Dental School, The University of Adelaide, Adelaide, South Australia.
SOURCE: Oral microbiology and immunology, (2003 Aug) 18 (4) 260-2. Journal code: 8707451. ISSN: 0902-0055.
PUB. COUNTRY: Denmark
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Dental Journals
ENTRY MONTH: 200309
ENTRY DATE: Entered STN: 20030726
Last Updated on STN: 20030930
Entered Medline: 20030929

AB Fusobacterium nucleatum, grown in a chemically defined medium at micro(rel) = 0.5, produced greater cell yields and undetectable levels of intracellular **polyglucose** (IP) when fructose was substituted for **glucose.** The utilisation and metabolism of fructose by growing cells was studied and the effect of the energy-yielding amino acids, glutamate, serine, **histidine** and lysine on cell yield, IP **synthesis** and acidic end-products was investigated. When F. nucleatum was grown on elevated amino acid levels, IP was **synthesised** from fructose and amino acids were metabolised to lactate, acetate, butyrate and formate. Under these conditions, IP **synthesis** was associated with the cells being replete with amino acid-derived energy; an observation supported by the absence of IP when the levels of (energy yielding) amino acids were reduced. Compared with fructose, **glucose** was less efficiently removed from the growth medium and produced less **biomass** and markedly lower levels of IP during energy-limited growth.

L19 ANSWER 7 OF 39 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 2003074907 EMBASE
TITLE: Genomics-based design of defined growth media for the plant pathogen Xylella fastidiosa.
AUTHOR: Lemos E.G.D.M.; Alves L.M.C.; Campanharo J.C.
CORPORATE SOURCE: E.G.D.M. Lemos, Depto. de Tecnologia, UNESP - Campus de Jaboticabal, Universidade Estadual Paulista, Via Acesso Prof. Paulo Donato C., 14884-900 Jaboticabal (SP), Brazil. egerle@fcav.unesp.br
SOURCE: FEMS Microbiology Letters, (14 Feb 2003) 219/1 (39-45). Refs: 28
ISSN: 0378-1097 CODEN: FMLED7
COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 004 Microbiology
LANGUAGE: English
SUMMARY LANGUAGE: English

AB Based on the genetic analysis of the phytopathogen Xylella fastidiosa genome, five media with defined composition were developed and the growth abilities of this fastidious prokaryote were evaluated in liquid media and on solid plates. All media had a common salt composition and included the same amounts of **glucose** and vitamins but differed in their amino acid content. XDM(1) medium contained amino acids **threonine**, serine, glycine, alanine, aspartic acid and glutamic acid, for which complete degradation pathways occur in X. fastidiosa; XDM(2) included serine and methionine, amino acids for which **biosynthetic** enzymes are absent, plus asparagine and glutamine, which are abundant in

the xylem sap; XDM(3) had the same composition as XDM(2) but with asparagine replaced by aspartic acid due to the presence of complete degradation pathway for aspartic acid; XDM(4) was a minimal medium with glutamine as a sole nitrogen source; XDM(5) had the same composition as XDM(4), plus methionine. The liquid and solidified XDM(2) and XDM(3) media were the most effective for the growth of X. fastidiosa. This work opens the opportunity for the in silico design of bacterial defined media once their genome is sequenced. .COPYRGT. 2002 Federation of European Microbiological Societies. Published by Elsevier Science B.V. All rights reserved.

L19 ANSWER 8 OF 39 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
ACCESSION NUMBER: 2002:600490 BIOSIS
DOCUMENT NUMBER: PREV200200600490
TITLE: **Synthesis** of an unusual polar glycopeptidolipid in **glucose**-limited **culture** of **Mycobacterium** smegmatis.
AUTHOR(S): Ojha, Anil Kr.; Varma, Saaket; Chatterji, Dipankar [Reprint author]
CORPORATE SOURCE: Molecular Biophysics Unit, Indian Institute of Science, Bangalore, 560012, India
dipankar@mbu.iisc.ernet.in
SOURCE: Microbiology (Reading), (October, 2002) Vol. 148, No. 10, pp. 3039-3048. print.
ISSN: 1350-0872.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 20 Nov 2002
Last Updated on STN: 20 Nov 2002
AB There has been a general understanding that Mycobacterium smegmatis produces only apolar glycopeptidolipid (GPL), similar in structure to serovar non-specific GPL of Mycobacterium avium. In this study, **synthesis** of polar GPL in carbon-starved M. smegmatis is reported. Mass spectrometric analysis suggests the polar GPL to be a hyperglycosylated species. The earlier structural studies of polar GPLs from M. avium have invariably shown the presence of an oligosaccharide appendage to D-allo-Thr. However, a further chemical analysis using beta-elimination of the newly found polar GPL in M. smegmatis shows that the molecule still contains a monosaccharide at the D-allo-Thr, thus suggesting a new form of polar GPL.

L19 ANSWER 9 OF 39 MEDLINE on STN DUPLICATE 3
ACCESSION NUMBER: 2002398425 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12147078
TITLE: Effect of L-malic and citric acids metabolism on the essential amino acid requirements for Oenococcus oeni growth.
AUTHOR: Saguir F M; Manca de Nadra M C
CORPORATE SOURCE: Facultad de Bioquimica, Quimica y Farmacia, Universidad Nacional de Tucuman, Tucuman, Argentina.
SOURCE: Journal of applied microbiology, (2002) 93 (2) 295-301.
Journal code: 9706280. ISSN: 1364-5072.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200209
ENTRY DATE: Entered STN: 20020731
Last Updated on STN: 20020914
Entered Medline: 20020913

AB AIMS: The purpose of this work was to study the effect of L-malic and/or citric acids on Oenococcus oeni m growth in deficient nutritional conditions, and their roles as possible **biosynthetic** precursors of the essential amino acids. METHODS AND RESULTS: **Bacterial cultures** were performed in **synthetic** media. Bacterial growth rate was reduced or annulled when one amino acid was omitted from basal medium, especially for members of aspartate family, except lysine. The organic acids increased or restored the growth rates to the respective reference values. In each medium deficient in one essential amino acid, the L-malic acid utilization was accompanied by an increase of L-lactic acid concentration and accounted for approximately 100%l-malic acid consumed. D-lactic acid formation from **glucose** decreased in the medium without cysteine. Except for tyrosine, the recovery of **glucose**-citrate as D-lactic acid was lower than in the complete medium when asparagine, **isoleucine** or cysteine were excluded. The ethanol and acetate production was not modified. CONCLUSIONS: L-malic and citric acids favoured Oenococcus oeni m growth in nutritional stress conditions. Specifically citric acid was involved in the **biosynthesis** of the aspartate-derived essential amino acids and **glucose** in the cysteine **biosynthesis.** SIGNIFICANCE AND IMPACT OF THE STUDY: Such beneficial effect of l-malic and citric acids on amino acids requirements of Oenococcus oeni m have great significance considering the low amino acids concentration in wine.

L19 ANSWER 10 OF 39 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN DUPLICATE 4

ACCESSION NUMBER: 2002:283217 BIOSIS
DOCUMENT NUMBER: PREV200200283217
TITLE: Growth and aroma production by Staphylococcus xylosus, S. carnosus and S. equorum: A comparative study in model systems.
AUTHOR(S): Sondergaard, Anne K.; Stahnke, Louise H. [Reprint author]
CORPORATE SOURCE: BioCentrum-DTU, Technical University of Denmark, Soltofts Plads Building 221, DK-2800, Kgs. Lyngby, Denmark louise.stahnke@biocentrum.dtu.dk
SOURCE: International Journal of Food Microbiology, (5 May, 2002) Vol. 75, No. 1-2, pp. 99-109. print. CODEN: IJFMDD. ISSN: 0168-1605.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 8 May 2002 Last Updated on STN: 8 May 2002

AB A laboratory medium inoculated with 20 different Staphylococcus strains was **prepared** in accordance with a full factorial experimental design investigating the effect of temperature, pH, NaCl and **glucose** on growth. The 12 strains most suited to growth in a fermented meat environment were inoculated in sausage minces together with Pediococcus pentosaceus, incubated at 25 degreeC for 1 week and the produced aroma compounds collected. The data were analysed by multiple linear regression and partial least squares regression analysis. The results showed that increasing pH and temperature from 4.6 to 6.0 and 10 to 26 degreeC, respectively, increased growth of all strains with strong synergy between temperature and pH. Increasing salt concentration from 5% to 15% w/v decreased growth of most strains, but the effect of pH and temperature was much stronger than the effect of salt. Strains of S. carnosus were more salt tolerant than strains of S. equorum and S. xylosus, especially at high pH and temperature. Addition of **glucose** up to 0.5% w/v had no significant influence on growth of any of the strains. With regard to aroma production, species characteristics were detected. S. carnosus and S. xylosus were quite

different regarding the overall aroma profiles, whereas the profiles of S. equorum lied somewhere in-between. Contrary to S. carnosus, S. xylosus and S. equorum did not produce 2-methyl-1-butanol. On the other hand, in particular, S. xylosus produced more 3-methyl-1-butanol. Except for one of the strains of S. equorum, S. xylosus and S. equorum formed more diacetyl, 2-butanone and acetoin and also more of the methyl-branched ketones arising from degradation of leucine, **isoleucine** and valine. S. carnosus produced more methyl-branched aldehydes, acids and corresponding esters from leucine, **isoleucine** and valine-compounds that have been correlated with fermented sausage maturity in former studies. S. equorum produced the least of the methyl-branched aldehydes.

L19 ANSWER 11 OF 39 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 2001422958 EMBASE
TITLE: Unique properties of four Lactobacilli in amino acid production and symbiotic mixed culture for lactic acid **biosynthesis.**
AUTHOR: Lee K.; Lee J.; Kim Y.-H.; Moon S.-H.; Park Y.-H.
CORPORATE SOURCE: J. Lee, Laboratory of Microbial Engineering, Korea Res. Inst. of Biosci./Biotech., P.O. Box 115, Yusong, Taejon 305-600, Korea, Republic of. jwlee@mail.kribb.re.kr
SOURCE: Current Microbiology, (2001) 43/6 (383-390).
Refs: 25
ISSN: 0343-8651 CODEN: CUMIDD
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 004 Microbiology
LANGUAGE: English
SUMMARY LANGUAGE: English

AB With four Lactobacilli - L. delbrueckii subsp. lactis (ATCC 12315), L. casei (NRRL-B1445), L. delbrueckii (NRRL-B445), and L. heveticus (NRRL-B1937) - the characteristics of cell growth and production of lactate and amino acids were investigated. Especially, the time-course variation in concentration of amino acids (classified into alanine, serine, aspartate, glutamate, aromatic amino acid, and **histidine** families) was estimated in detail, and the results were systematically compared. It was elucidated that L. delbrueckii (NRRL-B445) and L. helveticus (NRRL-B1937) had quite different characteristics in growth, lactic acid **synthesis**, and amino acid production. L. helveticus (NRRL-B1937) was superior in the production of amino acids as well as in cell growth, but showed very poor ability in lactic acid production. However, L. delbrueckii (NRRL-B445) showed higher yield of lactic acid despite repressed cell growth, but suffered from severe amino acid deficiency in culture. By modulating the initial concentration of each strain in the mixed culture containing both L. delbrueckii (NRRL-B445) and L. helveticus (NRRL-B1937), the lactic acid production (i.e., the amount of lactic acid produced and lactic acid yield to **glucose** consumed) was significantly improved, presumably via symbiotic interaction between the two strains.

L19 ANSWER 12 OF 39 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 2001164643 EMBASE
TITLE: **Glucose** kinase of Streptomyces coelicolor A3(2): Large-scale purification and biochemical analysis.
AUTHOR: Mahr K.; van Wezel G.P.; Svensson C.; Krengel U.; Bibb M.J.; Titgemeyer F.
CORPORATE SOURCE: F. Titgemeyer, Lehrstuhl fur Mikrobiologie, F.-A.-Univ.

Erlangen-Nurnberg, Staudtstr. 5, 91058 Erlangen, Germany. ftitgem@biologie.uni-erlangen.de
SOURCE: Antonie van Leeuwenhoek, International Journal of General and Molecular Microbiology, (2000) 78/3-4 (253-261).
Refs: 34
ISSN: 0003-6072 CODEN: ALJMAO
COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 004 Microbiology
LANGUAGE: English
SUMMARY LANGUAGE: English
AB **Glucose** kinase of Streptomyces coelicolor A3(2) is essential for **glucose** utilisation and is required for carbon catabolite repression (CCR) exerted through **glucose** and other carbon sources. The protein belongs to the ROK-family, which comprises bacterial sugar kinases and regulators. To better understand **glucose** kinase function, we have monitored the cellular activity and demonstrated that the choice of carbon sources did not significantly change the **synthesis** and activity of the enzyme. The DNA sequence of the Streptomyces lividans **glucose** kinase gene glkA was determined. The predicted gene product of 317 amino acids was found to be identical to S. coelicolor **glucose** kinase, suggesting a similar role for this protein in both organisms. A procedure was developed to produce pure **histidine**-tagged **glucose** kinase with a yield of approximately 10 mg/l culture. The protein was stable for several weeks and was used to raise polyclonal antibodies. Purified **glucose** kinase was used to explore protein-protein interaction by surface plasmon resonance. The experiments revealed the existence of a binding activity present in S. coelicolor cell extracts. This indicated that **glucose** kinase may interact with (an)other factor(s), most likely of protein nature. A possible cross-talk with proteins of the phosphotransferase system, which are involved in carbon catabolite repression in other bacteria, was investigated.

L19 ANSWER 13 OF 39 EMBASE
on STN
ACCESSION NUMBER: 1999160086 EMBASE
TITLE: trans-Acting factors affecting carbon catabolite repression of the hut operon in Bacillus subtilis.
AUTHOR: Zalieckas J.M.; Wray L.V. Jr.; Fisher S.H.
CORPORATE SOURCE: S.H. Fisher, Department of Microbiology, Boston University School of Medicine, 715 Albany St., Boston, MA 02118, United States
SOURCE: Journal of Bacteriology, (1999) 181/9 (2883-2888).
Refs: 43
ISSN: 0021-9193 CODEN: JOBAAY
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 004 Microbiology
LANGUAGE: English
SUMMARY LANGUAGE: English
AB In Bacillus subtilis, CcpA-dependent carbon catabolite repression (CCR) mediated at several cis-acting carbon repression elements (cre) requires the seryl-phosphorylated form of both the HPr (ptsH) and Crh (crh) proteins. During growth in minimal medium, the ptsH1 mutation, which prevents seryl phosphorylation of HPr, partially relieves CCR of several genes regulated by CCR. Examination of the CCR of the **histidine** utilization (hut) enzymes in cells grown in minimal medium showed that neither the ptsH1 nor the crh mutation individually had any affect on hut CCR but that hut CCR was abolished in a ptsH1 crh double mutant. In

contrast, the ptsH1 mutation completely relieved hut CCR in cells grown in Luria-Bertani medium. The ptsH1 crh double mutant exhibited several growth defects in **glucose** minimal medium, including reduced rates of growth and growth inhibition by high levels of glycerol or **histidine.** CCR is partially relieved in B. subtilis mutants which **synthesize** low levels of active glutamine **synthetase** (glnA). In addition, these glnA mutants grow more slowly than wild-type cells in **glucose** minimal medium. The defects ingrowth and CCR seen in these mutants are suppressed by mutational inactivation of TnrA, a global nitrogen regulatory protein. The inappropriate expression of TnrA-regulated genes in this class of glnA mutants may deplete intracellular pools of carbon metabolites and thereby result in the reduction of the growth rate and partial relief of CCR.

L19 ANSWER 14 OF 39 EMBASE on STN

ACCESSION NUMBER: 1999312534 EMBASE
TITLE: A study on growth characteristics and nutrient consumption of Lactobacillus plantarum in A-stat culture.
AUTHOR: Kask S.; Laht T.-M.; Pall T.; Paalme T.
CORPORATE SOURCE: T. Paalme, Inst. Chemical Physics Biophysics, Akadeemia tee 23, 12618 Tallinn, Estonia. tpaalme@kbfi.ee
SOURCE: Antonie van Leeuwenhoek, International Journal of General and Molecular Microbiology, (1999) 75/4 (309-320).
Refs: 27
ISSN: 0003-6072 CODEN: ALJMAO
COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 004 Microbiology
LANGUAGE: English
SUMMARY LANGUAGE: English

AB Lactobacillus plantarum was grown in complex media containing **glucose** and yeast extract. The maximum growth yield based on yeast extract consumption was 0.5 g dwt g-1. Growth yield Y(ATP) 15-17 g dwt mol ATP-1 was almost constant in the **glucose** limited A-stat experiment whereas in the yeast extract limited culture it increased with dilution rate. The maximum specific growth rate observed, 0.5 h-1, was similar for both A-stat and batch cultures. Specific oxygen consumption, Q(O2), reached the value of 1.8 mmol O2 h-1 g dwt-1. It was shown that Val, Ile, Leu, Tyr and Phe, were consumed mainly as free amino acids, while Asp, Pro, Lys and Arg were derived from peptides. Significantly more Asp, Ser, Glu, Val, Ile, Leu and Phe were consumed than needed to build up cell protein whereas some Pro, Gly, Ala and Lys was **synthesized.** A network of metabolic reactions in L. plantarum was proposed on the basis of the experimental data.

L19 ANSWER 15 OF 39 EMBASE on STN

ACCESSION NUMBER: 2000081422 EMBASE
TITLE: Nutritional requirements for the production of pyrazoloisoquinolinone antibiotics by Streptomyces griseocarneus NCIMB 40447.
AUTHOR: Cruz R.; Arias M.E.; Soliveri J.
CORPORATE SOURCE: J. Soliveri, Depto. de Microbiol. y Parasitologia, Facultad de Farmacia, Universidad de Alcala, E-28871-Alcala de Henares, Madrid, Spain. mpsoliveri@microb.alcala.es
SOURCE: Applied Microbiology and Biotechnology, (1999) 53/1 (115-119).
Refs: 28
ISSN: 0175-7598 CODEN: AMBIDG

COUNTRY: Germany
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 004 Microbiology
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English

AB This paper describes the effect of different nutrients on the production of pyrazoloisoquinolinone antibiotics (APHE) by Streptomyces griseocarneus. In a chemically defined medium with **glucose** as carbon and L-lysine as nitrogen source all APHE antibiotics (APHE-1 to -3) are produced, APHE-3 being the most abundant. Propionate and butyrate used as precursors with **glucose** as main carbon source increased the production of APHE-1 and -2, respectively. The presence of propionate or butyrate reduced the production of APHE-3. Results obtained in minimal medium supplemented with L-valine and L-**histidine** indicate a relationship between these amino acids and APHE **biosynthesis.** These data, together with those obtained in the presence of precursors of fatty acids, also show possible links with fatty acid **biosynthesis** . Different nutritional requirements were found for APHE-3 production in comparison with APHE-1 and APHE-2.

L19 ANSWER 16 OF 39 MEDLINE on STN DUPLICATE 5
ACCESSION NUMBER: 2000044110 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10579509
TITLE: Comparison of differential plating media and two chromatography techniques for the detection of histamine production in bacteria.
AUTHOR: Actis L A; Smoot J C; Barancin C E; Findlay R H
CORPORATE SOURCE: Department of Microbiology, Miami University, Oxford, OH 45056, USA.. actisla@muohio.edu
SOURCE: Journal of microbiological methods, (1999 Dec) 39 (1) 79-90.
Journal code: 8306883. ISSN: 0167-7012.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199912
ENTRY DATE: Entered STN: 20000113
Last Updated on STN: 20000113
Entered Medline: 19991215

AB The bacterial enzyme **histidine** decarboxylase (Hdc) catalyses the conversion of **histidine** into histamine. This amine is essential for the **biosynthesis** of iron chelators (siderophores) and is an important cause of food poisoning after consumption of fish contaminated with histamine-producing bacteria. In this work we compared different methods for detecting histamine secreted by different bacterial strains. The presence of histamine in the culture supernatant of Vibrio anguillarum, which produces Hdc and secretes the histamine-containing siderophore anguibactin, was detected by thin-layer chromatography. Similar results were obtained using the **culture** supernatant of the **Acinetobacter** baumannii 19606 prototype strain that secretes the histamine-containing siderophore acinetobactin. Conversely, histamine was not detected in the culture supernatant of an isogenic V. anguillarum Hdc mutant and the A. baumannii 8399 strain that secretes a catechol siderophore different from anguibactin and acinetobactin. These results were confirmed by capillary gas chromatography/mass spectrometry. However, all these strains tested positive for histamine secretion when cultured on differential plating media containing **histidine** and a pH indicator, which were specifically designed for the detection of

histamine-producing bacteria. The pH increase of the medium surrounding the bacterial colonies was however drastically reduced when the **histidine**-containing medium was supplemented with peptone, beef extract, and **glucose.** The **histidine**-containing culture supernatants of the A. baumannii and V. anguillarum strains showed an increase of about two units of pH, turned purple upon the addition of cresol red, and contained high amounts of ammonia. **Escherichia coli** strains, which are Hdc negative and do not use **histidine** as a carbon, nitrogen, and energy source, gave negative results with the differential solid medium and produced only moderate amounts of ammonia when cultured in the presence of excess **histidine.** This study demonstrates that, although more laborious and requiring some expensive equipment, thin-layer and gas chromatography/mass spectrometry are more accurate than differential media for detecting bacterial histamine secretion. The results obtained with these analytical methods are not affected by byproducts such as ammonia, which are generated during the degradation of **histidine** and produce false positive results with the differential plating media.

L19 ANSWER 17 OF 39 JICST-EPlus COPYRIGHT 2005 JST on STN
ACCESSION NUMBER: 1000500569 JICST-EPlus
TITLE: Study on the Stereoselective **Synthesis** of Cell Cycle Inhibitor, FR901464.
AUTHOR: HORIGOME MASATO
WATANABE HIDENORI; KITAHARA TAKESHI
CORPORATE SOURCE: Nisseikyorinseiyaku
Univ. of Tokyo, Grad. Sch.
SOURCE: Tennen Yuki Kagobutsu Toronkai Koen Yoshishu (Symposium Papers. Symposium on the Chemistry of Natural Products), (1999) vol. 41st, pp. 73-78. Journal Code: L0851A
PUB. COUNTRY: Japan
LANGUAGE: Japanese
STATUS: New
AB FR901464 1 is a new antitumor substance which was isolated from a **culture** broth of a **bacterium** of Pseudomonas sp. Number 2663. This shows transcriptional regulating activity and induces characteristic G1 and G2/M phase arrest in the cell cycle. Related to these activities, this shows potent antitumor effect. The unique structure as well as the significant biological activities prompted us to undertake the **synthesis** of this class of compound. Herein, we describe a stereoselective **synthetic** approach to 1. The acid was **synthesized** from a lactate using the reported method. N-Boc-L-**threonine** was used as the starting material to **synthesize** the sulfone. The aldehyde was **synthesized** from 2-deoxy-D-**glucose.** Having completed the **synthesis** of the three segments, we next examined the coupling processes. Condensation of the acid with the sulfone was achieved by using HBTU to give the amide. Using Julia olefination method, coupling of the amide and the aldehyde afforded the diene. The successive selective desilylation and oxidation, **synthesis** of ketone was achieved. This compound possesses the most carbon framework with the requisite asymmetric carbons involved in 1. Since it is considered as a potential advanced key intermediate in our designed **synthetic** strategy, conversion of it to the target molecule 1 is now under investigation. (author abst.)

L19 ANSWER 18 OF 39 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 1999043382 EMBASE
TITLE: Growth conditions of and emetic toxin production by Bacillus cereus in a defined medium with amino acids.

AUTHOR: Agata N.; Ohta M.; Mori M.; Shibayama K.
CORPORATE SOURCE: Dr. N. Agata, Nagoya City Public Health Res. Inst., 1-11 Hagiyama-cho Mizuho-ku, Nagoya, Aichi 467-8615, Japan
SOURCE: Microbiology and Immunology, (1999) 43/1 (15-18).
Refs: 14
ISSN: 0385-5600 CODEN: MIIMDV
COUNTRY: Japan
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 004 Microbiology
LANGUAGE: English
SUMMARY LANGUAGE: English

AB The growth and emetic toxin (cereulide) production of Bacillus cereus strains in defined culture media were studied. We found that a fully **synthetic** medium (CADM) allowed the production of emetic toxin and the addition of **glucose** enhanced it. By subtracting each amino acid from CADM, we found that only three amino acids, valine, leucine and **threonine**, were essential for growth and toxin production by B. cereus. The addition of high levels (50 mM) of leucine, **isoleucine** and glutamic acid decreased the toxin production. Other amino acids had no effect at this concentration.

L19 ANSWER 19 OF 39 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN DUPLICATE 6
ACCESSION NUMBER: 1998:134502 BIOSIS
DOCUMENT NUMBER: PREV199800134502
TITLE: Enhanced L-lysine production in **threonine**-limited continuous **culture** of **Corynebacterium** glutamicum by using gluconate as a secondary carbon source with **glucose.**
AUTHOR(S): Lee, H.-W.; Pan, J.-G.; Lebault, J.-M. [Reprint author]
CORPORATE SOURCE: Div. des Procedes Biotechnol., Univ. Technol. de Compiegne, B.P. 649/60206 Compiegne Cedex, France
SOURCE: Applied Microbiology and Biotechnology, (Jan., 1998) Vol. 49, No. 1, pp. 9-15. print.
CODEN: AMBIDG. ISSN: 0175-7598.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 20 Mar 1998
Last Updated on STN: 20 Mar 1998

AB In order to improve the production rate of L-lysine, a mutant of Corynebacterium glutamicum ATCC 21513 was cultivated in complex medium with gluconate and **glucose** as mixed carbon sources. In a batch culture, this strain was found to consume gluconate and **glucose** simultaneously. In continuous culture at dilution rates ranging from 0.2 h-1 to 0.25 h-1, the specific L-lysine production rate increased to 0.12 g g-1 h-1 from 0.1 g g-1 h-1, the rate obtained with **glucose** as the sole carbon source (Lee et al. (1995) Appl Microbiol Biotechnol 43:1019-1027). It is notable that L-lysine production was observed at higher dilution rates than 0.4 h-1, which was not observed when **glucose** was the sole carbon source. The positive effect of gluconate was confirmed in the shift of the carbon source from **glucose** to gluconate. The metabolic transition, which has been characterized by decreased L-lysine production at the higher **glucose** uptake rates, was not observed when gluconate was added. These results demonstrate that the utilization of gluconate as a secondary carbon source improves the maximum L-lysine production rate in the **threonine**-limited continuous culture, probably by relieving the limiting factors in the lysine **synthesis** rate such as NADPH supply and/or phosphoenolpyruvate availability.

L19 ANSWER 20 OF 39 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
ACCESSION NUMBER: 1998:495006 BIOSIS
DOCUMENT NUMBER: PREV199800495006
TITLE: Bifidobacteria fermentation of soybean milk.
AUTHOR(S): Kamaly, K. M. [Reprint author]
CORPORATE SOURCE: Dairy Sci. Technol. Dep., Fac. Agric., Menofiya Univ., Shebin El-Kom 32516, Egypt
SOURCE: Food Research International, (Nov., 1997) Vol. 30, No. 9, pp. 675-682. print.
CODEN: FORIEU. ISSN: 0963-9969.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 18 Nov 1998
Last Updated on STN: 18 Nov 1998

AB Growth rates and changes in pH of two strains of bifidobacteria; **Bfidobacterium** longum and B. bifidum **cultured** in reconstituted skimmed milk (RSM), soy milk and modified MRS broth have been investigated. Growth rates of both strains were in the following order: modified MRS broth > RSM > soy milk. Both strains exhibited comparable pH change in RSM and in soy milk. Bifidobacteria strains exhibited proteolytic activity and were more pronounced in soy milk than in RSM. Enrichment of soy milk with carbohydrates; lactose, galactose and **glucose** and protein hydrolysates; yeast extract, proteose peptone, casitone, polypeptone and phytone gave appreciable stimulation for growth and acid production by B. bifidum, whereas B. longum was not stimulated by carbohydrate and protein hydrolysate substrates. Among amino acids tested, sulphur-containing amino acid; cysteine was found to increase the populations of B. longum and B. bifidum by 5 times compared with soy milk without cysteine. Among the combination of amino acid mixtures; cysteine + **threonine** had potential synergistic effect upon growth and acid production by bifidobacteria. A desirable yoghurt-like fermented milk was **prepared** using RSM enriched with soy milk (20%), K-carrageenan, a mixture of amino acids, cysteine + **threonine** (0.05% each) and a single inoculum of bifidobacteria ssp. incubated for 24 h at 37degreeC.

L19 ANSWER 21 OF 39 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 96205082 EMBASE
DOCUMENT NUMBER: 1996205082
TITLE: Loss or overproduction of polypeptide release factor 3 influences expression of the **tryptophanase** operon of **Escherichia coli.**
AUTHOR: Yanofsky C.; Horn V.; Nakamura Y.
CORPORATE SOURCE: Department of Biological Sciences, Stanford University,Stanford, CA 94305, United States
SOURCE: Journal of Bacteriology, (1996) 178/13 (3755-3762).
ISSN: 0021-9193 CODEN: JOBAAY
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 004 Microbiology
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English

AB Expression of the **tryptophanase** (tna) operon of **Escherichia coli** is regulated by catabolite repression and by **tryptophan**-induced inhibition of Rho-mediated transcription termination. Previous studies indicated that **tryptophan** induction might involve leader peptide inhibition of

ribosome release at the stop codon of tnaC, the coding region for the operon-specified leader peptide. In this study we examined tna operon expression in strains in which the structural gene for protein release factor 3, prfC, is either disrupted or overexpressed. We find that prfC inactivation leads to a two- to threefold increase in basal expression of the tna operon and a slight increase in induced expression. Overexpression of prfC has the opposite effect and reduces both basal and induced expression. These effects occur in the presence of **glucose** and cyclic AMP, and thus Rho-dependent termination rather than catabolite repression appears to be the event influenced by the prfC alterations. prfC inactivation also leads to an increase in basal tna operon expression in various rho and rpoB mutants but not in a particular rho mutant in which the basal level of expression is very high. The effect of prfC inactivation was examined in a variety of mutants with alterations in the tna leader region. Our results suggest that translation of tnaC is essential for the prfC effect. The **tryptophan** residue specified by tnaC codon 12, which is essential for induction, when replaced by another amino acid, allows the prfC effect. Introducing UAG or UAA stop codons rather than the normal tnaC UGA stop codon, in a strain with an inactive prfC gene, also leads to an increase in the basal level of expression. Addition of the drug bicyclomycin increases basal operon expression of all mutant strains except a strain with a tnaC'-'lacZ fusion. Expression in the latter strain is unaffected by prfC alterations. Our findings are consistent with the interpretation that ribosome release at the tnaC stop codon can influence tna operon expression.

L19 ANSWER 22 OF 39 EMBASE
on STN

ACCESSION NUMBER: 95149567 EMBASE
DOCUMENT NUMBER: 1995149567
TITLE: A soil and rhizosphere microorganism isolation and enumeration medium that inhibits Bacillus mycoides.
AUTHOR: Buyer J.S.
CORPORATE SOURCE: USDA-ARS, Building 318 BARC-East, 10300 Baltimore Ave.,Beltsville, MD 20705-2350, United States
SOURCE: Applied and Environmental Microbiology, (1995) 61/5 (1839-1842).
ISSN: 0099-2240 CODEN: AEMIDF
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 004 Microbiology
046 Environmental Health and Pollution Control
LANGUAGE: English
SUMMARY LANGUAGE: English

AB A new solid medium has been developed for the enumeration and isolation of soil and rhizosphere microorganisms. This medium, named rhizosphere isolation medium, contains **glucose** and 15 of the 20 common amino acids. The absence of five other amino acids, namely, aspartic acid, asparagine, cysteine, proline, and **threonine**, inhibits the growth of Bacillus mycoides, a commonly encountered bacterium that rapidly spreads on agar media and complicates the isolation and enumeration of other microorganisms. Compared with a similar medium containing Casamino Acids, rhizosphere isolation medium had half as many colonies of B. mycoides, with each colony approximately half the diameter. The two media had similar total numbers of bacterial colonies. Isolates were divided into taxononomic groups, roughly corresponding to species and genus, by fatty acid methyl ester analysis and numerical methods. There were 24 genera and 41 species found in the isolates from rhizosphere isolation medium, while 19 genera and 35 species were found in the isolates from the medium **prepared** with Casamino Acids. No major group of bacteria

was found to occur only on one medium or on the other, indicating that the five missing amino acids had no great effect on organisms other than B. mycoides. This medium may prove useful in soil and rhizosphere studies in which the growth of B. mycoides is undesirable.

L19 ANSWER 23 OF 39 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 94217258 EMBASE
DOCUMENT NUMBER: 1994217258
TITLE: Peroxidase production by carbon and nitrogen sources fed-batch culture of Arthromyces ramosus.
AUTHOR: Tsujimura H.; Takaya M.; Katano K.; Matsumoto N.; Park Y.S.; Okabe M.
CORPORATE SOURCE: Dept of Applied Biological Chemistry, Faculty of Agriculture, Shizuoka University, Ohya 836,Shizuoka 422, Japan
SOURCE: Biotechnology Letters, (1994) 16/6 (575-580). ISSN: 0141-5492 CODEN: BILED3
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 004 Microbiology
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Carbon and nitrogen sources were investigated for improving peroxidase production by Arthromyces ramosus, a hyperproducer of peroxidase. **Glucose** as carbon source and a mixture of yeast extract and polypeptone at the ratio of 3 to 5 as nitrogen source in a production medium were shown to give the highest peroxidase activity. During the culture amino acids such as alanine, arginine, methionine, leucine, tyrosine and **tryptophan** were depleted. Therefore, **glucose** supplemented nitrogen source fed-batch culture was carried out and a peroxidase activity of 73 U/ml was obtained. This activity was 1.7 times higher than that of **glucose** fed-batch culture. This indicates that an adequate nitrogen source supply during the culture is effective for improving the peroxidase production by A. ramosus.

L19 ANSWER 24 OF 39 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 94309133 EMBASE
DOCUMENT NUMBER: 1994309133
TITLE: Histamine production by wine lactic acid bacteria: Isolation of a histamine-producing strain of Leuconostoc oenos.
AUTHOR: Lonvaud-Funel A.; Joyeux A.
CORPORATE SOURCE: Institut d'Enologie, 351 Cours de la Liberation,33405 Talence Cedex, France
SOURCE: Journal of Applied Bacteriology, (1994) 77/4 (401-407). ISSN: 0021-8847 CODEN: JABAA4
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 004 Microbiology
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Populations of Leuconostoc oenos were harvested from wines containing a relatively high concentration of biogenic amines. Cultivation of the **biomass** in **synthetic** media and wine showed that it consisted of histamine-producing strains. Histamine levels after culture depended on the quantity of precursor available and on the presence of yeast lees, which certainly enriched the medium in **histidine.** Ethanol and pH, which control bacterial growth rate and total population,

were also significant factors: pH and low ethanol concentration enhanced histamine production. Strain Leuc. oenos 9204 was isolated and studied since it retained its ability to produce histamine after several transfers. In **synthetic** medium this strain produced large amounts of histamine especially in the poorest nutritional conditions (no **glucose**, no L-malic acid). These results clearly demonstrate that Leuc. oenos involved in wine-making might play a role in biogenic amine production. The vinification method might also influence the final amine concentration in wine.

L19 ANSWER 25 OF 39 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN DUPLICATE 7

ACCESSION NUMBER: 1991:90506 BIOSIS
DOCUMENT NUMBER: PREV199191049396; BA91:49396
TITLE: OPTIMUM CONDITIONS FOR **HISTIDINE** PRODUCTION BY FED-BATCH **CULTURE** OF **BREVIBACTERIUM** -FLAVUM.
AUTHOR(S): CHIM-ANAGE P [Reprint author]; SHIOYA S; SUGA K-I
CORPORATE SOURCE: DEP OF FERMENTATION TECHNOL, OSAKA UNIV, SUITA, OSAKA 565, JAPAN
SOURCE: Journal of Fermentation and Bioengineering, (1990) Vol. 70, No. 6, pp. 386-391.
CODEN: JFBIEX. ISSN: 0922-338X.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 11 Feb 1991
Last Updated on STN: 12 Feb 1991

AB This study deals with the optimum conditions for **histidine** production by a mutant derived from Brevibacterium flavum. The mutant required uracil for growth and produced **histidine** and the inevitable byproduct, glycine, at high dissolved oxygen concentrations. The most characteristic feature of this mutant was its carbon source requirement. Neither **glucose** nor acetate alone could support growth and **histidine** production. Using exponential fed-batch culture, the following results were obtained. Growth of the mutant could be promoted and maintained at a desired value only when the molar consumption ratio of acetate and **glucose** (A/G consumption ratio) was in the range of 0.7 to 2.7. A high amount of glutamate wasy **synthesized** in addition to **histidine** and glycine at a low A/G consumption ratio (0.7 to 1.5). An A/G consumption ratio of 2.4 was determined to be optimal for **histidine** production in terms of specific production rate.

L19 ANSWER 26 OF 39 JAPIO (C) 2005 JPO on STN

ACCESSION NUMBER: 1989-196297 JAPIO
TITLE: PRODUCTION OF L-**TRYPTOPHAN** USING MICROORGANISMS CARRYING RECOMBINANT DNA
INVENTOR: MATSUI KAZUHIKO; ISHIDA MASAAKI; TSUCHIYA MAKOTO; SANO TAKANOSUKE
PATENT ASSIGNEE(S): AJINOMOTO CO INC
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 01196297	A	19890808	Heisei	C12N015-00

APPLICATION INFORMATION

STN FORMAT:	JP 1988-21486	19880201
ORIGINAL:	JP63021486	Showa

PRIORITY APPLN. INFO.: JP 1988-21486 19880201
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1989

AN 1989-196297 JAPIO
AB PURPOSE: To obtain L-**tryptophan** with enhanced productivity by making a **culture** in a **culture** medium **Corynebacteria** containing the recombinant DNA with base substitution within **tryptophan** operon.
CONSTITUTION: Firstly, chromosome gene is extracted from Corynebacteria containing **tryptophan** operon(TOP) etc., and treated with restriction enzyme to produce a composite plasmid (A) containing the structural gene of **tryptophan**(TRY) **biosynthetic** base.
Secondly, the component A and a vector such as pAM 330 are mutually ligated to produce a recombinant DNA (B) in which the manifestation domain composed of TOP promotor, operator and attenuator has been transformed into tac promotor. Thirdly, the component B is introduced into TRY-producing bacteria such as M 247 bacteria to produce a transformed strain. Finally, this strain is subjected to culture in a culture medium for producing TRY containing **glucose** etc., under arerobic conditions at desired pH and temperatures, thus accumulating the objective L-tryprophan in the culture medium.
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L19 ANSWER 27 OF 39 JAPIO (C) 2005 JPO on STN
ACCESSION NUMBER: 1989-187093 JAPIO
TITLE: PRODUCTION L-**THREONINE** BY FERMENTATION METHOD
INVENTOR: SHIIO ISAMU; TORIDE YASUHIKO; YOKOTA ATSUSHI; SUGIMOTO SHINICHI; KAWAMURA KAZUE
PATENT ASSIGNEE(S): AJINOMOTO CO INC
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 01187093	A	19890726	Heisei	C12P013-08

APPLICATION INFORMATION
STN FORMAT: JP 1988-12779 19880121
ORIGINAL: JP63012779 Showa
PRIORITY APPLN. INFO.: JP 1988-12779 19880121
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1989

AN 1989-187093 JAPIO
AB PURPOSE: To improve yield of L-**threonine** useful as a feed, medicine, etc., by cultivating a mutant strain with deficient or deteriorated dihydrodipicolinic **synthase**(DPS) of the genus **Brevibacterium** in a liquid **culture** medium.
CONSTITUTION: Brevibacterium flavum AJ 14067 of the genus Brevibacterium (Bre) is subjected to mutation treatment by irradiation with ultraviolet rays, etc., to select a strain with deficient or deteriorated DPS, having tolerance to α-amino-β-hydroxyvaleric acid and capable of producing L-**threonine** and provide Bre flavum 12360 strain (A).
The resultant strain (A) is subsequently inoculated into a culture medium containing a carbon source, such as **glucose**, a nitrogen source, such as urea, diaminopimelic acid, lysine, etc., to afford a culture solution (B), which is then aerobically cultivated at pH 5∼9 and 20∼40°C for 24∼72hr to provide a culture (C). The resultant component (C) is subsequently extracted and purified to collect the aimed L-**threonine**.
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L19 ANSWER 28 OF 39 JAPIO (C) 2005 JPO on STN
ACCESSION NUMBER: 1989-039997 JAPIO
TITLE: PRODUCTION OF L-**TRYPTOPHAN** BY FERMENTATION
INVENTOR: UEDA YOSHIZUMI; YOMOTO KYOSUKE
PATENT ASSIGNEE(S): TORAY IND INC
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 01039997	A	19890210	Heisei	C12P013-22

APPLICATION INFORMATION
STN FORMAT: JP 1987-198482 19870807
ORIGINAL: JP62198482 Showa
PRIORITY APPLN. INFO.: JP 1987-198482 19870807
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1989
AN 1989-039997 JAPIO
AB PURPOSE: To obtain L-**tryptophan** useful for a medicine, feed additive, etc., in high accumulating concentration at a low cost on an industrial scale, by aerobically cultivating a microorganism belonging to the genus Citrobacter and having L-**tryptophan** producing ability in a liquid culture medium.
CONSTITUTION: Citrobacter freudii IFO 13545 strain is subjected to variation treatment by ultraviolet ray irradiation, etc., to provide Citrobacter freudii FTR 66-36 strain exhibiting >=50% in relative growth degree when cultivated in a **tryptophan** metabolism antagonist-containing medium **prepared** as to be <=40% in relative growth rate after 24hr in cultivation of parent strain and being a variant strain resistant to **tryptophan** metabolism antagonist. The variant strain is aerobically cultivated in a liquid culture medium containing 2∼15wt.% **glucose**, 0.5∼4wt.% urea at 5∼9pH and 24∼37°C for 48∼120hr. Then the filtrate obtained by removing a **bacterium** cell from the resultant **culture** medium is passed through a strongly acidic cation exchange resin, etc., eluted, concentrated and purified to provide the aimed L-**tryptophan.**
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L19 ANSWER 29 OF 39 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 89242587 EMBASE
DOCUMENT NUMBER: 1989242587
TITLE: Improved electroporation efficiency of intact Lactococcus lactis subsp. lactis cells grown in defined media.
AUTHOR: McIntyre D.A.; Harlander S.K.
CORPORATE SOURCE: Department of Food Science and Nutrition, University of Minnesota, St. Paul, MN 55108, United States
SOURCE: Applied and Environmental Microbiology, (1989) 55/10 (2621-2626).
ISSN: 0099-2240 CODEN: AEMIDF
COUNTRY: United States
DOCUMENT TYPE: Journal
FILE SEGMENT: 004 Microbiology
LANGUAGE: English
SUMMARY LANGUAGE: English
AB The impact of growth conditions on electroporation of Lactococcus lactis subsp. lactis LM0230 (previously designated Streptococcus lactis LM0230) was evaluated. Cells grown in M17 broth supplemented with 0.5%

glucose (M17-Glu) and two chemically defined **synthetic** media, FMC and RPMI 1640, all supplemented with 0.24% DL-**threonine** or 0.5% glycine, were harvested, washed with double-distilled water, diluted, and porated in the presence of 1 μg of pGB301 DNA with a Transfector 100 (BTX, Inc., San Diego, Calif.) or a Gene Pulser (Bio-Rad Laboratories, Richmond, Calif.). Transformants were recovered at consistently higher efficiencies for cells grown in FMC or RPMI 1640 (103 to 104 transformants per μg of DNA) than for cells grown in M17-Glu (101 to 102 transformants per μg of DNA). Other parameters influencing electroporation of L. lactis cells grown in chemically defined media were growth phase and final concentration of cells, concentration of plasmid DNA, voltage achieved during poration, and expression conditions. A high degree of variability in transformation efficiencies was evident for replicate samples of cells pulsed with either electroporation machine. A trend toward decreased variability was observed for duplicate samples of cells **prepared** on the same day. In addition, storage studies done with a large batch of cells **prepared** on the same day indicated that freezing dry cell pellets at -60°C had no deleterious effect on transformation efficiencies over a 30-day period when a new 0.2-cm cuvette was used for porating each sample.

L19 ANSWER 30 OF 39 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 1988:90069 BIOSIS
DOCUMENT NUMBER: PREV198885046841; BA85:46841
TITLE: EFFECT OF PYRUVATE KINASE DEFICIENCY ON L LYSINE PRODUCTIVITIES OF MUTANTS WITH FEEDBACK-RESISTANT ASPARTOKINASES.
AUTHOR(S): SHIIO I [Reprint author]; YOKOTA A; SUGIMOTO S-I
CORPORATE SOURCE: CENTRAL RES LAB, AJINOMOTO CO, INC, KAWASAKI-KU, KAWASAKI, KANWASAKI, KANAGAWA 210, JAPAN
SOURCE: Agricultural and Biological Chemistry, (1987) Vol. 51, No. 9, pp. 2485-2494.
CODEN: ABCHA6. ISSN: 0002-1369.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 11 Feb 1988
Last Updated on STN: 11 Feb 1988

AB The cultural conditions were investigated for a Brevibacterium flavum mutant, Number 2-190, with a low level of citrate **synthase** (CS) and with feedback-resistant phosphoenolpyruvate (PEP) carboxylase and aspartokinase (AK). The productivity was increased from 28 to 38 g/l (as the HCl salt) with medium containing 10% **glucose.** From this strain, pyruvate kinase (PK)-defective mutants were derived and selected as to the inability to grown on ribose. Among them, strain KL-18 showed higher lysine productivity than the parent under all cultural conditions tested, and produced 43 g/l of lysine, at maximum. A lysine-producing mutant, Number 536-4, with a feedback-resistant AK was derived from PK-defective strain KH-21 which had low CS activity and a feedback-resistant PEP carboxylase. The mutant was isolated by a new selection method, that is, on the basic of resistance to α-amino-β-hydroxyvaleric acid, a **threonine** analogue plus lysine. In this strain, HD had been altered so as to become feedback-resistant at the same time, resulting in the byproduction of **threonine** and **isoleucine.** The total amount of these aspartate family amino acids was higher on molar basis than that of lysine produced by strain Number 2-190.

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on STN
ACCESSION NUMBER: 85040682 EMBASE
DOCUMENT NUMBER: 1985040682
TITLE: Alternative pathways for **biosynthesis** of leucine and other amino acids in Bacteroides ruminicola and Bacteroides fragilis.
AUTHOR: Allison M.J.; Baetz A.L.; Wiegel J.
CORPORATE SOURCE: National Animal Disease Center, Agricultural Research Service, US Department of Agriculture, Ames, IA 50010, United States
SOURCE: Applied and Environmental Microbiology, (1984) 48/6 (1111-1117).
CODEN: AEMIDF
COUNTRY: United States
DOCUMENT TYPE: Journal
FILE SEGMENT: 004 Microbiology
LANGUAGE: English

AB Bacteroides ruminicola is one of several species of anaerobes that are able to reductively carboxylate isovalerate (or isovaleryl-coenzyme A) to **synthesize** α-ketoisocaproate and thus leucine. When isovalerate was not supplied to growing B ruminicola cultures, carbon from [U-14C]**glucose** was used for the **synthesis** of leucine and other cellular amino acids. When unlabeled isovalerate was available, however, utilization of [U-14C]**glucose** or [2-14C]acetate for leucine **synthesis** was markedly and specifically reduced. Enzyme assays indicated that the key enzyme of the common isopropylmalate (IPM) pathway for leucine **biosynthesis**, IPM **synthase**, was present in B. ruminicola cell extracts. The specific activity of IPM **synthase** was reduced when leucine was added to the growth medium but was increased by the addition of **isoleucine** plus valine, whereas the addition of isovalerate had little or no effect. The activity of B. ruminicola IPM **synthase** was strongly inhibited by leucine, the end product of the pathway. It seems unlikely that the moderate inhibition of the enzyme by isovalerate adequately explains the regulation of carbon flow by isovalerate in growing **cultures.** **Bacteroides** fragilis apparently also uses either the isovalerate carboxylation or the IPM pathway for leucine **biosynthesis.** Furthermore, both of these organisms **synthesize** **isoleucine** and phenylalanine, using carbon from 2-methylbutyrate and phenylacetate, respectively, in preference to **synthesis** of these amino acids de novo from **glucose.** Thus, it appears that these organisms have the ability to regulate alternative pathways for the **biosynthesis** of certain amino acids and that pathways involving reductive carboxylations are likely to be favored in their natural habitats.

L19 ANSWER 32 OF 39 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
ACCESSION NUMBER: 1984:271014 BIOSIS
DOCUMENT NUMBER: PREV198478007494; BA78:7494
TITLE: AMINO-ACIDS AND VITAMINS PRODUCED BY AZOTOBACTER-VINELANDII ATCC-12837 IN CHEMICALLY DEFINED MEDIA AND DIALYZED SOIL MEDIA.
AUTHOR(S): GONZALEZ-LOPEZ J [Reprint author]; SALMERON V; MORENO J; RAMOS-CORMENZANA A
CORPORATE SOURCE: DEP MICROBIOL, FAC PHARM, UNIV GRANADA, GRANADA, SPAIN
SOURCE: Soil Biology and Biochemistry, (1983) Vol. 15, No. 6, pp. 711-714.
CODEN: SBIOAH. ISSN: 0038-0717.
DOCUMENT TYPE: Article

FILE SEGMENT: BA
LANGUAGE: ENGLISH
AB The liberation of amino acids and vitamins by A. vinelandii ATCC 12837 was studied in chemically-defined media and dialyzed soil media. **Azotobacter cultured** in dialyzed soil medium without **glucose**, showed a very small capacity of amino acid and vitamin **synthesis.** The production of amino acids and vitamins was increased when **Azotobacter** was **cultured** in chemically-defined media, specially when NH4NO3 was added. Arginine was liberated by Azotobacter only in N-free medium. **Tryptophan** and methionine were produced only when NH4NO3 was added to the N-free medium.

L19 ANSWER 33 OF 39 JAPIO (C) 2005 JPO on STN
ACCESSION NUMBER: 1980-118395 JAPIO
TITLE: **PREPARATION** OF L-SERINE BY FERMENTATION
INVENTOR: MAEDA OSAMU; KUBOTA KOJI
PATENT ASSIGNEE(S): AJINOMOTO CO INC
PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 55118395	A	19800911	Showa	C12P013-06

APPLICATION INFORMATION
STN FORMAT: JP 1979-22834 19790228
ORIGINAL: JP54022834 Showa
PRIORITY APPLN. INFO.: JP 1979-22834 19790228
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1980
AN 1980-118395 JAPIO
AB PURPOSE: To **prepare** L-serine in high yield from glycine, by culturing a strain capable of producing L-serine, using a medium having glycine and isoleucino with not less than a given concentration. CONSTITUTION: A usual medium, comprising carbohydrates, e.g., **glucose**, starch, an organic acid, e.g., acetic acid, hydrocarbons, alcohols or etc. as main carbon sources, an ammonium salt, an inorganic salt, as nitrogen sources, and a trace amount of other organic nutrient, is **prepared.** 0.1∼5g/dl of glycine and not less than 0.02g/dl of L-**isoleucine** are added to the medium, in which a microorganism capable of producing L-serine from glycine is **cultured. Brevibacterium** hervolume is used as the L-serine producing strain. The culture temperature is 20∼40°C and the pH of the culture solution is preferably adjusted to 5∼9. After 2'10 days culture, L-serine is formed and accumulated in the culture solution and separated from the solution by a conventional method. COPYRIGHT: (C)1980,JPO&Japio

L19 ANSWER 34 OF 39 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 80179010 EMBASE
DOCUMENT NUMBER: 1980179010
TITLE: Some chemical and physical characteristics of pantomycin, an antibiotic isolated from Streptomyces hygroscopicus.
AUTHOR: Gurusiddaiah S.; Graham S.O.
CORPORATE SOURCE: Bioanal. Cent., Washington State Univ., Pullman, Wash. 99164, United States
SOURCE: Antimicrobial Agents and Chemotherapy, (1980) 17/6 (980-987).
CODEN: AMACCQ
COUNTRY: United States

DOCUMENT TYPE: Journal
FILE SEGMENT: 037 Drug Literature Index
030 Pharmacology
004 Microbiology
LANGUAGE: English

AB The production, isolation, and some structural studies of an antifungal, anti-**bacterial**, and antiviral substance from **cultures** of Streptomyces hygroscopicus are described. This material, designated pantomycin, appears to be a polypeptide antibiotic with inclusion of fatty acids and carbohydrate residues. Amino acid analysis of pantomycin acid hydrolysates indicates that it contains **threonine**, serine, proline, glycine, alanine, valine, **alloisoleucine**, and an as-yet-unidentified amino acid which appears to be different from types encountered in proteinaceous materials. In addition to the aforementioned compounds, the antibiotic was shown to contain α-aminobutyric acid after hydrogenation. Analysis of ether extracts of the hydrolysate mixture indicated the presence of several fatty acids; myristic, the hydrolase mixture indicated the presence of several fatty acids; myristic, isotridecanoic, lauric, and undecylic acids. The amino and fatty acid composition of pantomycin is similar to the known antibiotic stendomycin. Pantomycin appears to also have at least one carbohydrate-like residue incorporated into its structure. The presence of carbohydrate was indicated by periodic acid-Schiff base-staining of electrophoretic patterns as well as positive color formation in the phenol-sulfuric and Molisch tests, but the carbohydrate did not appear to be either a hexose or a **pentose.** The antibiotic, which appears to be dissociated in alcoholic solution, forms stable aggregates under aqueous conditions.

L19 ANSWER 35 OF 39 MEDLINE on STN
ACCESSION NUMBER: 80203464 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6769799
TITLE: Isolation, characterization, and biological properties of a tuberculin-active peptidoglycan isolated from the **culture** filtrate of **Mycobacterium** tuberculosis.
AUTHOR: Gupta K C; Landi S
SOURCE: Infection and immunity, (1980 Feb) 27 (2) 344-50.
Journal code: 0246127. ISSN: 0019-9567.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198008
ENTRY DATE: Entered STN: 19900315
Last Updated on STN: 19900315
Entered Medline: 19800815

AB A water-soluble tuberculin-active peptidoglycan (TAPG) with a molecular weight of ca. 28,000 to 30,000 was isolated from the **culture** filtrate of **Mycobacterium** tuberculosis. TAPG was approximately four to five times more potent than tuberculin purified protein derivative S in guinea pigs sensitized with M. tuberculosis or M. bovis (freeze-dried BCG). It showed little or no cross-reactivity at a dose of 0.1 to 0.4 microgram in guinea pigs sensitized with M. kansasii, M. scrofulaceum, M. intracellulare, or M. avium. TAPG did not show any adjuvant activity when injected in guinea pigs in a water-in-oil emulsion containing ovalbumin. TAPG, in Freund incomplete adjuvant, proved to be an effective immunogen for inducing delayed hypersensitivity in guinea pigs. Chemical analysis of TAPG showed that it contains proline, glutamic acid, alanine, diaminopimelic acid, tyrosine, **threonine**, glucosamine, and the reducing sugars, **arabinose** and galactose. In

immunoelectrophoretic studies with reference M. tuberculosis H37Rv antiserum, TAPG did not show any precipitin bands.

L19 ANSWER 36 OF 39 MEDLINE on STN
ACCESSION NUMBER: 80206927 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7381915
TITLE: Ammonia production by intestinal bacteria: the effects of lactose, lactulose and **glucose**.
AUTHOR: Vince A J; Burridge S M
SOURCE: Journal of medical microbiology, (1980 May) 13 (2) 177-91. Journal code: 0224131. ISSN: 0022-2615.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198008
ENTRY DATE: Entered STN: 19900315
Last Updated on STN: 19900315
Entered Medline: 19800828

AB Ammonia production by eight groups of intestinal bacteria was measured, and the effect on ammonia production of lowered pH and ambient ammonia concentration was determined. Endogenous ammonia production from bacterial protoplasm was also examined. To examine the mechanisms by which fermentable substrates reduce ammonia formation in a faecal incubation system, the effect of lactose, lactulose or **glucose** on ammonia release by pure **cultures** of intestinal **bacteria** was studied. The largest amounts of ammonia were generated by gram-negative anaerobes, clostridia, enterobacteria, and Bacillus spp. Gram-positive non-sporing anaerobes, streptococci and micrococci formed modest amounts, and lactobacilli and yeasts formed very little ammonia. All groups of bacteria formed less ammonia at pH 5.0 than at pH 7.0 and production of ammonia was not inhibited when 30 mmol ammonia/litre was included in the medium. Small amounts of ammonia were formed due to endogenous metabolism of bacterial cells. Washed cell suspensions of four isolates of Bacteroides, one clostridial isolate and two streptococcal isolates formed less ammonia from alanine, methionine or **histidine** after growth in the presence of either lactose or lactulose. In contrast, the Bacteroides isolates formed more ammonia from aspartate than from either lactose or lactulose. Also, cultures of gram-negative anaerobes and enterobacteria, and to a lesser extent clostridia and streptococci, formed significantly less ammonia in nutrient broth when lactose, lactulose or **glucose** was included in the medium. This decrease in ammonia formation was not due to a fall in pH of the medium. Ammonia production by gram-positive non-sporing anaerobes was not affected by carbohydrate fermentation. These results suggest that gram-negative anaerobic bacteria make a major contribution to ammonia generated from peptides and amino acids in vivo, and that ammonia may be formed from bacterial cells in the colon. Fermentation of lactose and lactulose may repress the formation and inhibit the activity of enzymes responsible for ammonia release. In the human colon these substrate effects may decrease the amount of ammonia available to exert a toxic effect on the host, and thus contribute to the beneficial effects of lactulose when it is used in the treatment of portosystemic encephalopathy.

L19 ANSWER 37 OF 39 EMBASE on STN
ACCESSION NUMBER: 77059121 EMBASE
DOCUMENT NUMBER: 1977059121
TITLE: Analysis of RNA turnover in bacteria using

histidine as a radioactivity trap for [2 3H]adenine nucleotides.
AUTHOR: Burton K.
CORPORATE SOURCE: Dept. Biochem., Univ. Newcastle upon Tyne, United Kingdom
SOURCE: Journal of Molecular Biology, (1976) 102/2 (333-348). CODEN: JMOBAK
DOCUMENT TYPE: Journal
FILE SEGMENT: 004 Microbiology
023 Nuclear Medicine
029 Clinical Biochemistry
LANGUAGE: English
AB 3H is incorporated from [2-3H]adenine into **histidine** and thence into protein by **bacterial cultures synthesizing histidine.** The kinetics of incorporation of 3H into protein, RNA and DNA are used to evaluate RNA turnover in growing **E. coli.** In strain B at 37°C, the fraction of pulse labelled RNA which is unstable changes from 0.83 to 0.50 as the growth rate is increased from 0.08 to 2.6 generations per hour. The unstable fraction is 0.65 at 1.27 generations per hour in **glucose** salts medium. Results for other strains of **E. coli**, for Salmonella typhimurium and Bacillus subtilis indicate a similar extent of RNA turnover.

L19 ANSWER 38 OF 39 MEDLINE on STN
ACCESSION NUMBER: 75223900 MEDLINE
DOCUMENT NUMBER: PubMed ID: 1156084
TITLE: Determination of the efficiency of oxidative phosphorylation in continuous **cultures** of **Aerobacter** aerogenes.
AUTHOR: Stouthamer A H; Bettenhaussen C W
SOURCE: Archives of microbiology, (1975 Mar 10) 102 (3) 187-92. Journal code: 0410427. ISSN: 0302-8933.
PUB. COUNTRY: GERMANY, WEST: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197511
ENTRY DATE: Entered STN: 19900310
Last Updated on STN: 19900310
Entered Medline: 19751105
AB For anaerobic **glucose**-limited chemostat **cultures** of **Aerobacter** aerogenes a values of 14.0 g/mole was found for Ymax/ATP and a value of 6.8 mmoles ATP/g dry weight/hr for the maintenance coefficient. Both values are much lower than those previously determined for **tryptophan**-limited anaerobic chemostat cultures. It is concluded that generally the largest part of the maintenance energy is not used for true maintenance processes. For aerobic **glucose** -limited chemostat cultures two phases could be differentiated. Acetate production started at mu values higher than 0.53. The slopes of the curves relating the specific rates of **glucose**- and oxygen consumption with mu became higher and lower respectively above the mu value of 0.53. Using the YATP values obtained in the anaerobic experiment a P/O ratio of about 1.3 could be calculated for **glucose**- and **tryptophan**-limited chemostat cultures. In sulfate-limited chemostat cultures acetate was produced at all growth rates. At high growth rates also pyruvate and alpha-ketoglutarate were produced. With the YATP values obtained in the anaerobic experiment a P/O ratio of about 0.4 was calculated for sulfate-limited chemostat cultures.

L19 ANSWER 39 OF 39 EMBASE

on STN
ACCESSION NUMBER: 74120256 EMBASE
DOCUMENT NUMBER: 1974120256
TITLE: Kinetics of derepression of the **tryptophan** operon of **Escherichia coli** and Salmonella typhimurium under different culture conditions.
AUTHOR: Mosteller R.D.; Mandula B.
CORPORATE SOURCE: Dept. Biochem., Univ. South. California Sch. Med., Los Angeles, Calif. 90033, United States
SOURCE: Journal of Molecular Biology, (1973) 80/4 (801-823). CODEN: JMOBAK
DOCUMENT TYPE: Journal
FILE SEGMENT: 029 Clinical Biochemistry
022 Human Genetics
LANGUAGE: English

AB Studies of the kinetics of derepression of the **tryptophan** (trp) operon in cultures of **Escherichia coli** and Salmonella typhimurium show that the times of appearance (lag times) of newly **synthesized** trp operon polypeptides following derepression are nearly invariant under many different culture conditions at a fixed temperature and that, following the lag period, specific activities of trp operon polypeptides increase in a smoothly continuous manner. During derepression, newly **synthesized** trp operon polypeptides appear sequentially with lag times of approximately 6, 3 and 2 minutes for anthranilate **synthetase** complex or phosphoribosyl anthranilate transferase at 25, 30 and 37°C, respectively, and approximately 10, 7 and 4 minutes for **tryptophan synthetase** α polypeptide at the same temperatures. These lag times are about 45 to 50% longer than transcription times reported for the corresponding regions of the trp operon at the same temperatures. Trimethoprim inhibition, which increases the increment between lag times for the **histidine** and lactose operons, causes only slight delays in appearance of trp polypeptides or in **synthesis** of specific regions of trp operon messenger RNA following derepression in cultures of **E. coli**. Under these conditions, the level of N formylmethionyl tRNA in the culture is unchanged compared to an uninhibited control. Concentrations of trimethoprim necessary to lower the level of N formylmethionyl tRNA prevent derepression of operon. Under most conditions, the differential rates of **synthesis** of trp operon operon polypeptides following derepression of cultures of **E. coli** are about 250, 490 and 880 molecules/cell/minute for anthranilate **synthetase** at 25, 30 and 37°C, respectively, and 180, 450 and 660 molecules/cell/minute for **tryptophan synthetase** α polypeptide at the same temperatures. These rates are lower when bacterial growth is restricted by **histidine** limitation, inhibition by 2 thiazolealanine (a **histidine** analog), or trimethoprim inhibition. **Bacterial** strains and **culture** conditions were used which mimic as closely as possible conditions which give simultaneous derepression of the his operon in S. typhimurium, nearly simultaneous induction of the lac operon in S. typhimurium/F' lac merodiploids, or simultaneous induction of the **arabinose** operon in **E. coli** B/r. These conditions include addition of one carbon compounds (L serine, L methionine, adenine and thymine), use of the specific **histidine** auxotrophs and addition of the **histidine** analog, 2 thiazolealanine. Under all conditions, the trp operon derepresses sequentially, although under some conditions in cultures of **E. coli** (**histidine** limitation, trimethoprim inhibition) lag times are increased and under some conditions in cultures of S. typhimurium (**histidine** limitation, 2 thiazolealanine inhibition)

derepression of the trp operon is prevented.